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MELANOSIS COLI

THE ETIOLOGIC SIGNIFICANCE OF THE ANTHRACENE
LAXATIVES: A REPORT OF FORTY-ONE CASES

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AND

JOSEPH BANK, M.D.

PHILADELPHIA

Although melanotic pigmentation of the colon has been recognized for almost a century, there has been surprisingly little written on this subject from a clinical standpoint. In the course of routine sigmoidoscopic examinations, this striking type of discoloration is not infrequently seen. The color of the mucosa varies from buff to dark brown or black, the deeper shade being broken into small angular, polyhedral designs by fine netlike striae of lighter shade, either yellow or brown. These small fields vary in size between 2 and 10 mm. in diameter. Small pinhead yellow follicles are frequently seen, being more noticeable in the milder cases of melanosis. One of the earliest writers likened the appearance of the mucosa of the bowel to that of a toad's back.¹ Others have compared the appearance to a snake, crocodile or tiger skin.² To us the pigmentation suggests somewhat a cross section of nutmeg.

REVIEW OF THE LITERATURE

According to Stewart and Hickman,³ the first reference to a case of melanosis coli was that of Cruveilhier,⁴ who wrote in about 1830: "M. Andral has found in an individual affected with chronic diarrhea, the inner surface of the large intestine as black as chinese ink, from the ileocecal valve right down to the rectum. The color resided in the internal membrane, which showed no other alterations beyond a remarkable development of its follicles." Virchow apparently first applied the name melanosis coli to this condition in 1858. His specimen, labeled in his own hand, is in the pathologic institute in Berlin. In 1898, Solger⁵ reported the autopsy examinations of seven cases which he termed "colitis pigmentosa," a term since discarded because inflammatory changes have not been demonstrated.

Read before the American Gastro-Enterological Association, Washington, D. C., May 8, 1933.

Because of lack of space, this article is abbreviated here by the omission of the tables. The complete article appears in the authors' reprints.

1. Williams, C. T.: Black Deposit in the Large Intestine from the Presence of Mercury, *Tr. Path. Soc. London* 18: 11, 1867.

2. Lignac, G. O. E.: Ueber sogenannte "Melanosis Coli," *Krankheitsforsch.* 2: 162 (Dec.) 1925.

3. Stewart, M. J., and Hickman, E. M.: Observations on Melanosis Coli, *J. Path. & Bact.* 34: 61 (Jan.) 1931.

4. Cruveilhier, Jean: *Anatomie pathologique du corps humain*, Paris 19: 6, 1829-1835.

5. Solger, F. B.: Dickdarmmelanose, *Inaug. Diss.*, Greifswald, 1898 (quoted by Lubarsch and Borchardt⁷).

Pick,⁶ in 1911, collected twelve cases from the literature and added six of his own. He was the first to call attention to the fact that "the melanosis of the mucosa of the large intestine can be clinically diagnosed by means of the rectoscope."

Site of Involvement.—Pick found the entire colon to be involved and commented on the sharp demarcation at the ileocecal valve, the distal portion being pigmented while the proximal side was free. The density of pigmentation varied in different parts of the colon, in some cases being more marked in the cecum and ascending colon, while in others the descending colon was darker. He was impressed by the lack of other pathologic changes in the colon. "Signs of ulceration, scars, inflammatory residue or catarrhal states of proliferation were not found." Other organs were free of abnormal pigmentation.

The entire colon is not always involved, according to subsequent writers. Lubarsch and Borchardt⁷ found the principal sites of deposit in the cecum, appendix and ascending colon. Stewart and Hickman state that "almost invariably the pigmentation is deepest in the cecum and ascending colon, and it becomes less intense on passing down the gut. Very exceptionally the melanosis is more intense in the lower than in the upper part of the intestine; occasionally it is patchily distributed." According to Lignac, the largest amount of pigment is found in the cecum and in the rectum. Several authors (Henschen and Bergstrand,⁸ Lubarsch and Borchardt, Stewart and Hickman) have noted pigmentation in the ileum. Many writers comment on the presence of pigment in the lymph glands of the mesocolon (Lubarsch and Borchardt, Henschen and Bergstrand, Lignac, Stewart and Hickman).

Pigmentation of the vermiform appendix has been frequently described with or without associated pigmentation of the colon. Pick stated that the appendix was usually involved in melanosis coli. In ten of Henschen and Bergstrand's sixty-five cases the pigment was limited to the appendix. Stewart and Hickman state that "melanosis is not infrequently met with in surgically removed appendixes; the naked-eye and microscopic characters are similar to those of melanosis coli." There is some doubt, however, that all the pigmented appendixes are cases of true melanosis, since the pigment was called hemosiderin by Schmidt,⁹ and Battle¹⁰ demonstrated iron in four of his cases (table 1).

6. Pick, L.: Ueber die Melanose der Dickdarmschleimhaut, *Berl. klin. Wchnschr.* 48: 840-845 (May 8), 884-890 (May 15) 1911.

7. Lubarsch, O., and Borchardt, H.: Die Melanosis Coli, *Handb. d. spez. path. Anat. u. Hist.*, Berlin 4: 75, 1929.

8. Henschen, F., and Bergstrand, H.: Studien ueber die Melanose der Darmschleimhaut, *Beitr. z. path. Anat. u. z. allg. Path.* 56: 103, 1913.

9. Schmidt, M. B.: Ueber Pigmentbildung in den Tonsillen und im Processus Vermiformis, *Verhandl. d. deutsch. path. Gesellsch.* 11: 24, 1907.

10. Battle, W. H.: The Black (Pigmented) Appendix, *Lancet* 2: 135 (July 19) 1913.

Stewart and Hickman frequently found melanosis coli in association with cancer of the colon. In a clinical series of 100 cases of carcinoma of the colon, the incidence of melanosis grossly was 55 per cent. An additional 13 per cent was found on microscopic examination. In autopsy material the incidence was about the same (table 2). The melanosis in these cases was attributed to the concomitant intestinal stasis. It was usually more marked above the growth but was frequently found below it. The incidence of melanosis did not vary to any extent with the location of the cancer. Porter¹¹ reported a case of melanosis of the cecum in association with cancer of the terminal ileum. He quotes a communication from Ewing: "Melanosis is a rare but well known complication of tumors of the cecum and is due to chronic stasis which arises in some of these cases."

Histology.—The pigment is usually confined to the stroma or tunica propria of the mucosa. It lies within large mononuclear cells whose exact nature is unsettled. Pick regarded them as connective tissue cells; Henschen and Bergstrand, as wandering cells of connective tissue or possibly lymphatic origin. Lubarsch and Borchardt, Lignac, and Stewart and Hickman were uncertain of their nature. McFarland¹² called them plasma cells. Writers agree that the epithelial cells are free of pigment.

The appearance of the pigment varies with the degree of pigmentation. In the very early cases, small yellowish-brown granules appear in the cytoplasm (Stewart and Hickman). Later these granules may increase in size and become darker, gradually filling the entire cytoplasm of the cell. Free pigment may be seen, probably due to disintegration of the pigment cells (Lubarsch and Borchardt). While usually limited to the tunica propria, invasion of the muscularis by a few cells has been reported (Henschen and Bergstrand, McFarland, Lubarsch and Borchardt, Stewart and Hickman), and lymphatic involvement is not uncommon. Stewart and Hickman suggest that the melanin may first appear in the superficial zone of the tunica propria and that the pigmented cells may then migrate to the deeper zones of the mucosa. Pick suggested that the fine striations of lighter color were due to ramifications of blood vessels and that the punctate light-colored follicles represented mucosal lymphoid tissue. This opinion has been generally accepted.

Nature and Origin of the Pigment.—Early writers believed that the colonic pigmentation resulted from the ingestion of a heavy metal, either mercury or lead (Williams,¹ Pitt,¹³ Rolleston¹⁴). However, Solger and Pick could demonstrate no heavy metals in chemical analysis of their cases. Virchow¹⁵ was the first to suggest a hematogenous origin as a result of his chemical studies. This theory is still held by many writers (Solger, Neumann,¹⁶ Lignac), and the condition is referred to in many textbooks as hemochromatosis (Lynch,¹⁷ Gant,¹⁸ Rankin, Borgen and Buie,¹⁹

Lockhart-Mummery²⁰). Solger felt that vascular congestion predisposed to pigment formation; hemorrhages into the intestinal tract with subsequent bacterial action were suggested by Lignac, while Lynch postulated a disturbance of the chromogenic function of the liver secondary to bowel infection and toxemia. However, careful chemical analysis has failed to reveal iron in pigment obtained from the colon in the hands of Pick, Solger, Henschen and Bergstrand, and Lubarsch and Borchardt, although the latter state that siderosis may coexist with melanosis. Dalldorf²¹ was unsuccessful in an attempt to produce pigment in a colostomized dog by injections of blood. The limitation of the pigmentation to the colon is likewise difficult to explain if its source is hematogenous.

The possible relationship between the bowel pigment and bile pigments was considered by Solger, but his tests for these substances were negative.

The similarity of the pigment in melanosis and in ochronosis was noted by Lubarsch and Borchardt, but they concluded that "the ochronosis of the cartilage which is observed in alkaptonuria has in all probability no bearing on the pigmentation of the colon." The intestinal mucosa was free of pigment in Goldberg's²² case of ochronosis from the external use of phenol.

The majority of writers feel that the pigment is a true melanin or a melanin-like substance. Pick²³ and Lubarsch²⁴ concluded that the pigment was the same as the melanin found in skin and hair. Lubarsch noted that the usual wear and tear pigment was present in all tissues (epithelium, muscle, nerve) while he believed that the melanin of melanosis coli was present only in connective tissue cells. Hueck,²⁵ Henschen and Bergstrand, Dalldorf, and McFarland classify the pigment as being intermediate between true melanin and wear and tear pigment (lipofuscin), because of slight differences noted chemically between true melanin and pigment obtained from the colon. That such difference of opinion exists is not surprising, since the exact chemical nature of melanin is not known. Percival and Stewart²⁶ recently reviewed the subject of melanogenesis and concluded that it is "probable that there exists a whole series of chemical compounds, more or less closely related, and known to us collectively as melanins. . . . Briefly, then, we may say that melanin is the name applied to a group of nitrogenous substances which contain neither iron nor sulphur as an essential part of the molecule, which may contain various amino acids, and which contain the indole ring." Chemical study has shown that melanin is formed in members of the vegetable and animal kingdoms by the action of a ferment on certain cyclic compounds, such as tyrosine, phenol and pyrogallol (Bertrand,²⁷ von Fürth²⁸). Quattini²⁹ found that the injection of pyrrole, indole and skatol into the skin of rabbits resulted in melanin formation. The chemical nature of the transformation

11. Porter, M. F.: Coincident Cancer and Melanosis of the Bowel, *Surg., Gynec. & Obst.* 43:744 (Dec.) 1926.

12. McFarland, W. L.: Pigmentation of the Hind-Gut, *J. A. M. A.* 69:1946 (Dec. 8) 1917.

13. Pitt, G. N.: Colon Pigmented Black Throughout with Lead, *Tr. Path. Soc. London* 42:109, 1891.

14. Rolleston, H. D.: Colon Pigmented from Mercury, *Tr. Path. Soc. London* 43:69, 1892.

15. Virchow, Rudolf: Die pathologischen Pigmente, *Virchows Arch. f. path. Anat.* 1:379, 1847.

16. Neumann, Ernst: Beiträge zur Kenntniss der pathologischen Pigmente, *Virchows Arch. f. path. Anat.* 111:25, 1888.

17. Lynch, J. M.: Diseases of the Rectum and Colon, Philadelphia, Lea & Febiger, 1914, p. 374.

18. Gant, S. G.: Diseases of the Rectum, Anus and Colon, Philadelphia, W. B. Saunders Company, 86, 1923.

19. Rankin, F. W.; Borgen, J. A.; and Buie, L. A.: Diseases of the Rectum, Colon and Anus, Philadelphia, W. B. Saunders Company, 1932, p. 334.

20. Lockhart-Mummery, P. L.: Diseases of the Rectum and Colon, London, Baillière, Tindall & Cox, 1923, p. 686.

21. Dalldorf, G. J. G.: Melanosis Coli, *Beitr. z. path. Anat. u. z. allg. Path.* 78:225 (Aug.) 1927.

22. Goldberg, S. E.: Ochronosis, *Arch. Int. Med.* 43:196 (Feb.) 1929.

23. Pick, P. L., and Brahn, B.: Das Pigment der Melanosis Coli und seine chemische Darstellung aus dem Organ, *Virchows Arch. f. path. Anat.* 275:37, 1930.

24. Lubarsch, O.: Ueber das sogenannte Lipofuscin, *Virchows Arch. f. path. Anat.* 239:491, 1922.

25. Hueck, W.: Pigmentstudien, *Beitr. z. path. Anat. u. z. allg. Path.* 54:160, 1912.

26. Percival, G. H., and Stewart, C. P.: Melanogenesis: A Review, *Edinburgh M. J.* 37:497 (Sept.) 1930.

27. Bertrand, quoted by Raper.²⁸

28. von Fürth, O.: Melanotic Pigment, *Centrallbl. f. allg. Path. u. path. Anat.* 15:619, 1904.

29. Quattini, M., quoted by Spencer, W. G.: Melanosis, *Brit. M. J.* 2:907 (Nov. 17) 1923.

from chromogen to melanin has been studied by Raper.³⁰ Working with tyrosine and tyrosinase, he isolated an intermediate substance, dioxyphenylalanine, which was easily oxidized to a red pigment and later to melanin. Bloch³¹ called this intermediate substance "dopa." By immersing tissue in a solution of dopa, certain cells were found to have the ability to make melanin. He considered these cells melanoblasts and believed they contained a ferment, which he termed dopa-oxidase. Percival and Stewart confirmed Bloch's work and concluded that "there is convincing evidence . . . that the dopa reaction resembles very closely or is identical with the normal process of melanin formation. The dopa reaction demonstrates the presence within the cell of an oxidase, the reaction of which seems so far to be specific. It is certain that the ferment exists in the melanoblasts, and that any cell which can be shown to contain it may be regarded as capable of producing melanin."

It was Pick's belief that the melanin in melanosis coli resulted from aromatic protein decomposition products of the contents of the colon (indole, skatol) under the influence of an oxidative ferment produced by the connective tissue cells of the mucosa. The ability to produce this ferment was thought to be limited to certain individuals. The association of constipation with melanosis stressed by all recent writers on the subject supports the theory of Pick, which is accepted by Stewart and Hickman, and Henschen and Bergstrand. McFarland suggested that a ferment was formed in the intestinal contents and that pigment was manufactured by such intestinal mucosa as came in contact with and absorbed this ferment. Dalldorf felt that bacterial action in the colon could account for the production of pigment, which was then absorbed by the mucosa.

Laidlow,³² using Bloch's technic previously described, failed to demonstrate cells in the intestine capable of producing melanin in a case of melanosis coli. Many sections of bowel, not pigmented, also failed to show the presence of melanoblasts. This author feels that the pigment is probably derived from ingested food-stuffs and is then phagocytized by the cells of the intestine.³³

ANALYSIS OF CASES

This report comprises a series of forty-one cases of melanosis coli involving the lower part of the colon as determined by sigmoidoscopy.

Incidence.—Reports as to the incidence of melanosis coli on macroscopic examination of autopsy specimens vary from 0.04 per cent (Pick) to 11.2 per cent (Stewart and Hickman) (table 3). Henschen and Bergstrand demonstrated pigment microscopically in 55 of 225 cases (24.5 per cent) as compared with 1.6 per cent by gross examination. In the study of specimens of colon removed at operation for intestinal stasis, McFarland found definite melanosis in 11 of 206 cases (5.3 per cent).

Twenty-six of our cases were found in an active office file containing 960 case records, giving an incidence of 2.7 per cent. Sigmoidoscopic examination was performed in approximately 553 of these cases, giving an incidence of 4.7 per cent of the cases in which the possibility of making the diagnosis was present. Most

patients on whom this examination was performed had varying degrees of colon stasis. In segregating the cases of colon stasis it was found that approximately 53 per cent of the 960 cases could be so classified. The incidence of melanosis in the cases of colon stasis was 5.1 per cent. No other statistics were found in the literature giving the incidence of melanosis as diagnosed by sigmoidoscopy. Lockhart-Mummery, however, estimated that rectal pigmentation occurs in about 1 per cent of patients.

Site of Involvement.—Practically without exception the pigmentation was more intense in the rectum, usually just inside the anal sphincter. In most patients the color of the colon was observed to be less dark the higher the instrument was passed into the sigmoid. In some extreme cases the degree of pigmentation was the same in the rectum and the sigmoid. It is probable that the rectum was not inspected in many of the cases of melanosis reported in the literature in which the diagnosis was based on necropsy or surgically resected material.

Age.—Solger, Pick, Dalldorf, and Henschen and Bergstrand have emphasized that melanosis is found predominantly in older persons. Obviously the age incidence of melanosis determined from autopsy cases cannot be absolutely accurate. Evidence of melanosis clinically in our series was found to be most prevalent during the age periods in which constipation is most frequently encountered in office practice; namely, between the ages of 30 and 60 years. It was present in four patients under 30 years of age.

The age incidence in our forty-one cases follows: from 20 to 29 years, four cases; from 30 to 39 and from 40 to 49, twelve cases each; from 50 to 59, nine cases, and from 60 to 69 and from 70 to 79, two cases each.

Sex.—There was very little difference in the incidence of melanosis in the sexes in the cases of Lubarsch and Borchardt and of Henschen and Bergstrand. Stewart and Hickman reported melanosis in 9.4 per cent of female as compared to 12.5 per cent of male patients. All of Dalldorf's patients were females. Only five in our series of forty-one cases, or 12 per cent, occurred in the male sex. We explain this by the much greater incidence of constipation and the laxative habit among our female patients. Constipation is much less frequent in early and middle life in the male sex. The later age period of reported autopsy cases may explain the discrepancy between the sex incidence in our cases and those just quoted.

Race.—Melanosis is not peculiar to the white race. Two of ten patients seen at the Graduate Hospital were Negroes.

Constipation.—Obstinate constipation was present in every case and with few exceptions was the reason given for seeking medical advice. Of the group of forty-one cases, constipation had been present "always" in fifteen and "for years" in the remainder, except for four cases in which the history dated back approximately one year.

Laxatives.—Only two patients admitted depended on enemas and seven others used enemas or irrigations frequently. The entire group was primarily dependent on laxatives for bowel evacuations. In thirty-five of forty-one cases it was possible to ascertain the type of laxative used (table 5). Cascara sagrada was used either alone or in combination with Alophen, aloin or

30. Raper, H. S.: Aerobic Oxidases, *Physiol. Rev.* 8:245 (April) 1928.

31. Bloch, Bruno: The Problem of Pigment Formation, *Am. J. M. Sc.* 177:609 (May) 1929.

32. Laidlow, G. F.: Melanoma Studies, *Am. J. Path.* 8:477 (Sept.) 1932.

33. Laidlow, G. F.: Personal communication to the authors.

rhubarb in twenty-seven cases. In the remaining eight cases, Alophen was used in five, Lady Webster pills in two and compound licorice powder in one case. Many patients admitted taking other laxatives previously but these mentioned were employed for a considerable period previous to the discovery of the melanosis.

In ten cases (29 per cent), the laxative had been used daily for one year or less. The shortest period was four months of the daily use of cascara. However, this individual had taken an unknown laxative pill for twenty years previously. Cascara was the laxative recorded in eight of these cases and Alophen in the remaining two cases. Five patients had used one of the laxatives mentioned from one to five years, six patients from six to ten years and five patients from eleven to twenty-five years. In nine cases the time of using the laxative in question was stated as "years." With the exception of six cases in the entire series, the drug was taken daily. In three of the latter cases the frequency of its use was in doubt and in the other three it was used either two or three times a week.

As far as we have been able to determine, Bartle,³⁴ in 1928, has been the only author referring to a possible relationship between laxative habit and pigmentation of the colon. He described the pigmentation as a hemochromatosis occurring in patients addicted to the use of cascara over long periods of time. Many authors (Cushny,³⁵ Sollmann,³⁶ Bastedo,³⁷ Valaer³⁸) state that cascara, aloes, rhubarb, senna and frangula comprise a distinct group of cathartics that owe their activity to the presence of irritating anthracene or emodin compounds. Cushny says: "The chemical examination of these drugs is a matter of difficulty as they often contain several active principles which are very nearly related to each other, and some of which are undoubtedly the products of decomposition of more complex bodies. All those which have been completely isolated have proved to be derivatives of anthraquinone. All members of the group contain emodins, or trioxymethylanthraquinone." According to Sollmann, Tappeiner and Brandl,³⁹ in 1889, showed that emodins act largely on the large intestine and do not cause any increase in secretion. Roentgen study has substantiated this view (Magnus,⁴⁰ Meyer-Betz and Gebhardt⁴¹). Cushny explains this site of action by assuming that the drugs do not find suitable conditions for solution in the small bowel. Historically, some of these drugs are very old. Sollmann states that rhubarb has been used since antiquity in China and by Roman physicians. Aloes was used in ancient Greece and probably in Egypt, while senna was introduced by the Arabians. Cascara is an American product, having been introduced in 1872 as "Donnelly's Discovery." Bundy⁴² wrote the first scientific article in 1879. In the forms commonly used, all the members of this group are associated with pigment which seems intimately related to the active principles.

34. Bartle, H. J.: The Sigmoid, *M. J. & Rec.* **127**: 521 (May 16) 1928.

35. Cushny, A. R.: *Textbook of Pharmacology and Therapeutics*, ed. 8, Philadelphia, Lea & Febiger, 1924, p. 95.

36. Sollmann, Torald: *Manual of Pharmacology*, ed 4, Philadelphia, W. B. Saunders Company, 1932, p. 232.

37. Bastedo, W. A.: *Materia Medica*, ed. 3, Philadelphia, W. B. Saunders Company, 1932, p. 179.

38. Valaer, P.: A Study of the Emodin Bearing Group of Cathartics, *J. Am. Pharm. A.* **19**: 235 (March) 1930.

39. Tappeiner, H., and Brandl, J.: Cathartics, *Arch. f. exper. Path. u. Pharmacol.* **26**: 177, 1889.

40. Magnus, R.: Digestive Movements, *Ergebn. d. Physiol.* **2**: 637, 1914, quoted by Sollmann.³⁶

41. Meyer-Betz, F., and Gebhardt, T.: Cathartics, *München. med. Wchnschr.* **59**: 1793, 1912.

42. Bundy, J. H.: Cascara Sagrada, a Valuable Remedy, *New Preparations*, Parke, Davis and Co., January, 1879, p. 1.

It is noteworthy that in every one of our patients with melanosis from whom a laxative history could be obtained, cascara or some other member of this laxative family had been taken practically daily for long periods just previous to the finding of the colonic pigmentation.

Bowel Putrefaction.—Since several authors have mentioned the possible importance of the presence of putrefactive bodies in the colon in the development of melanosis, our cases were reviewed from that standpoint.

(a) A careful dietary history was taken of twenty-eight patients. The daily ingestion of an excessive amount of putrefactive proteins (meat, fish, eggs or poultry) was noted in only one. This class of proteins was taken once or twice daily by nine patients and only once daily by fourteen. Two patients admitted taking putrefactive proteins only occasionally and two others had been following a nonputrefactive diet for two and three years. From a perusal of the records of many other cases of colon stasis without melanosis, we concluded that our patients with melanosis were not using a greater quantity of putrefactive proteins than the average patient with constipation. If the history given by two patients can be relied on, the ingestion of food capable of putrefying in the bowel is not essential to the development of melanosis.

(b) Without entering into a discussion of the indican test as a measure of bowel putrefaction, the feeling at present seems to be that a persistently strong reaction for indican in the urine indicates the presence of putrefaction. It is doubtful, however, if a negative test rules out this condition. The test was performed in twenty-five cases with the following results: negative, 12; very faint, 5; plus 1, 3; plus 2, 2; plus 3, 2, and plus 4, 1. The incidence of indicanuria in this series of patients with melanosis is quite the same as a similar number of cases of colon stasis without pigmentation, reviewed for comparison.

Clinical Survey of Colon.—These cases were reviewed in order to determine the existence of any abnormalities common to the group and consequently of significance in the etiology of melanosis. The type of anal sphincter was recorded in twenty-four cases. Hypertonicity or stricture was noted in eleven cases, or 46 per cent. The sphincter was normal in nine and atonic in five cases, or 21 per cent. The size of the rectum, based on digital examination, was noted in thirty-eight cases. Marked dilatation was present in all but two cases. In spite of the fact that most patients were using large doses of laxatives daily, 75 per cent of them had fecal accumulations in the rectum when digitally examined. Rectal dilatation and proctostasis seemed, therefore, to be an almost constant finding. In twenty-seven of thirty cases the stools originally examined were of mushy or liquid consistency. In many instances, bowel movements did not occur unless sufficient laxative was ingested to produce a soft evacuation. As anticipated, in rectums of this type the incidence of catarrhal proctosigmoiditis was high. In nineteen of twenty-three cases (83 per cent) an excessive amount of mucus was noted at the time of original sigmoidoscopy. The mucus in most cases was described as being of the yellow adherent type rather than clear so-called neurogenic mucus.⁴³

Roentgen Survey.—Barium enema examinations were analyzed in twenty-seven cases. Eighty-five per cent

43. Bockus, H. L.; Bank, Joseph, and Wilkinson, S. A.: Neurogenic Mucous Colitis, *Am. J. M. Sc.* **176**: 813 (Dec.) 1928.

of these patients had the long redundant type of colon. The colon was capable of a sufficient degree of dilatation to record in twenty-two, or 81 per cent. It was most marked in the rectum and sigmoid but in many cases it was present throughout the colon. Spastic phenomena, so commonly encountered in constipation, were strikingly uncommon in this group. Spasticity was noted, often in a comparatively mild degree, in nine cases. It was most frequently present in the pelvic colon. A marked degree of ileocecal incompetence was found in only five cases.

Associated Symptoms.—Constipation may exist for years without giving rise to subjective complaints. Commonly, symptoms develop after the habit of using laxatives, enemas or irrigations has been formed. For this reason and in order to ascertain to what extent the melanosis may be responsible for colonic symptoms, the following analysis is included:

(a) *Abdominal Symptoms:* Obviously it is difficult to determine the mechanism responsible for many vague abdominal complaints if disease is suspected in more than one organ. However, coexisting extracolonic disease was encountered rarely in this group of patients. Symptoms that were thought to arise from the colonic tract were present in thirty of forty-one cases, or 73 per cent. Variable degrees of migratory, generalized or lower abdominal discomfort or pain occurred in seventeen patients. Two patients complained of occasional spells of diarrhea. In eleven cases the symptoms were in large part epigastric, consisting of burning, fulness, pressure sensations, nausea and vomiting.

(b) *So-called Toxic or Constitutional Manifestations:* The incidence of the complaints that are often mentioned in toxic bowel states is given in this group of cases of melanosis. Headache was noted in twenty-seven cases; fatigue, malaise or excessive drowsiness in fourteen; dizziness or vertigo in six; joint pains, "neuritis" or "neuralgia" in five, and insomnia in four cases. A moderate to severe secondary anemia was encountered sixteen times and a count at the lower limit of normal was present in nine cases. In thirteen patients the state of nutrition was recorded as poor. The appearance of the skin was mentioned as being "muddy" or slightly pigmented in twelve patients. Obviously the mechanism responsible for symptoms of this type is difficult and often impossible to determine. However, in most instances no condition other than the bowel stasis could be found to account for their presence. That many of these symptoms were actually dependent on a toxic bowel factor is suggested by their gradual disappearance and the general improvement of the health of the patients after the institution of the type of bowel regimen outlined. It is our feeling that the aforementioned symptoms are dependent on the advanced colon stasis and the concomitant catarrhal colitis coincident thereto rather than on the melanosis per se. The same symptoms occur in severe types of colonic stasis without melanosis.

Effect of Treatment of the Melanosis (table 6).—Twenty-nine patients were treated for constipation under our supervision. All laxatives were discontinued with the exception of magnesium oxide, which was used at the onset in twenty-three cases. Almost as a routine it was prescribed as a powder in combination with kaolin and often with belladonna and calcium. Small doses of liquid petrolatum were used in most instances and agar flakes in about one half of the cases. From one to six tablespoonfuls of lactose was prescribed in

twenty-four cases. The diet during the first few weeks was either entirely devoid of putrefactive proteins (ten cases) or contained only a very small amount of this class of foods. Colon irrigations were not ordered. Enemas were employed at the beginning of treatment in a few cases. The usual advice concerning the necessity for establishing a habit time and the importance of exercise and correction of faults in the manner of living was given.

A number of authors have stated that melanosis coli is permanent. Both Bartle and Lynch, however, have observed a disappearance of the pigmentation. An opportunity was afforded to reexamine the bowel mucosa through the sigmoidoscope after the institution of treatment in eighteen cases of this series. In fifteen, the melanosis had disappeared. The shortest disappearance time observed was four months, in an individual who had been taking cascara daily for ten years. The longest period elapsing between sigmoidoscopic examinations in which the pigmentation was observed to persist was twenty-seven months. This patient, however, was not under close supervision and probably resorted to some of the anthracene laxatives from time to time. However, a third sigmoidoscopy performed five years after the first showed no evidence of pigmentation. In only two others reexamined after a year or more (twelve and fourteen months) was the melanosis observed to be still present. A third check-up in eighteen months and four and two-thirds years, respectively, no longer revealed melanosis of the colon in the two patients.

The time elapsing between sigmoidoscopic examinations in the three patients in whom the pigmentation has not yet disappeared was three weeks, six weeks and four months. The second examination in the first two patients revealed a lessening in the degree of pigmentation and follicular hypertrophy. The third case showed no change after a lapse of four months. From this analysis it is estimated that from four to twelve months is necessary to a complete disappearance of pigmentation of the rectosigmoid in well established cases of melanosis.

COMMENT

An analysis of experimental data summarized from the literature indicates that the pigment responsible for melanosis coli does not contain iron and probably is not associated with any disturbance of sulphur metabolism (Percival and Stewart⁴⁴). We can find nothing to support the view that melanosis is in any way dependent on or associated with hemochromatosis, ochronosis, sulphhemoglobinemia (Harrup and Waterfield⁴⁵) or methemoglobinemia. The pigment apparently belongs to the family of melanins, previously discussed. It lies within the large mononuclear cells in the tunica propria layer of the mucosa but never involves the epithelial cells. Laidlow's inability to demonstrate the presence of melanoblasts in the colonic mucosa favors the theory of phagocytosis from the intestinal lumen rather than pigment manufacture within the mononuclear cells. Laidlow feels that the melanin in the intestine may be derived from foodstuffs. Our review of forty-one cases of melanosis coli diagnosed clinically by sigmoidoscopy discloses that every patient from whom a detailed laxative history was obtained had used habitually for long periods one of the group of

44. Percival, G. H., and Stewart, C. P.: Sulphydril and Melanogenesis, *Brit. J. Dermat.* 42: 215 (May) 1950.

45. Harrup, G. A., and Waterfield, R. L.: Sulphemoglobinemia, *J. A. M. A.* 95: 647 (Aug. 30) 1950.

laxatives containing anthracene or emodin compounds. The laxative effect of this group of drugs is due to their irritant action on the large intestine. They are highly complex, containing resinous substances. In the forms usually dispensed, they contain some pigment which seems intimately related to the active principle. It seems highly probable that the anthracene laxatives either contain a pigment or elaborate a pigment within the colon which is phagocytized by the deep mucosal cells causing melanosis coli. Whether melanosis coli can develop in individuals who have not taken any of the anthracene laxatives, it is impossible to state. The use of some of the laxatives in this group dates back to antiquity.

The question might be fairly raised that the history of the use of the anthracene laxatives in these cases is entirely incidental, since this group of drugs is used so commonly in constipation. For this reason, we analyzed the case records of 300 patients whose bowels were constipated on whom sigmoidoscopic examinations had been carried out who did not show melanosis and found that thirty-seven patients, or 12.3 per cent, used one of the anthracene laxatives, the remainder relying on other laxatives, cathartics or enemas. We feel that obtaining a history of the use of anthracene laxatives in 100 per cent of thirty-five cases of melanosis and of only 12.3 per cent of persons whose bowels were equally constipated without melanosis is significant of the importance of this family of laxatives in the etiology of melanosis. An analysis of the group of thirty-seven patients addicted to anthracene laxatives without melanosis does not definitely reveal the cause for their failure to develop pigmentation. As a group, the laxatives were used less frequently, or the information concerning their frequency was not available. The constipation seemed just as marked and catarrhal changes in the bowel were found with equal frequency. They did seem to be more addicted to the use of enemas or irrigations.

The principal predisposing factor in the development of melanosis is probably undue stasis of intestinal contents. This may explain its high incidence in cases of cancer of the colon and in resected appendixes. The obstinate constipation in our cases was almost always associated with observations indicative of long-standing proctostasis permitting of prolonged contact of the mucosa with any pigment that might be resident within the rectosigmoid. It is also of interest that these patients were not given to "flushing" the colon either with enemas or with irrigations. The history of constipation of only one year's standing in four cases serves only to emphasize the primal importance of the laxative habit in the etiology. We doubt whether bowel putrefaction per se is responsible for melanosis. The possibilities for the development of putrefaction were slight in many cases, and crude laboratory tests for putrefaction were frequently negative. Although histologic examination of melanotic bowel material has failed to reveal any signs of marked inflammatory changes, the sigmoidoscopic examination of 83 per cent of our cases suggested the presence of a concomitant catarrh, probably induced by the laxatives used. Whether the associated catarrh may have preceded or actually encouraged the deposition of the pigment it is impossible to state.

SUMMARY

1. The literature of melanosis coli has been reviewed particularly from the standpoint of the nature, origin

and chemistry of the pigment and the manner of its deposition in the mucosa.

2. Previous reports on melanosis coli are based on material removed at operation or autopsy. In spite of the striking picture presented through the sigmoidoscope, we have not encountered a comprehensive study of the condition based on a proctosigmoidoscopic diagnosis in the literature. A series of forty-one cases so diagnosed is analyzed.

3. Melanosis coli was diagnosed in 4.7 per cent of 553 patients subjected to sigmoidoscopic examination, the great majority of whom were so examined because of colon stasis.

4. The pigmentation when not uniformly distributed was always more intense in the rectum; gradually fading out in the upper sigmoid in many cases.

5. The age incidence corresponded to the age period in which constipation was most frequently encountered among our patients; namely, between 30 and 60 years. Eighty-eight per cent of the patients were women.

6. Obstinate constipation of years' standing was noted in all but four patients whose bowels had been constipated for only one year.

7. A laxative history in thirty-five cases fails to show a single case in which one of the anthracene laxatives, usually cascara, had not been used for long periods immediately preceding the finding of the melanosis.

8. Detailed study of the colon in these cases indicates the existence of an extreme degree of proctostasis which permits of contact with contained pigment material over long periods. A concomitant catarrhal proctosigmoiditis was usually found. It is felt that bowel putrefaction per se is not responsible for the pigmentation.

9. The high incidence of abdominal and so-called toxic symptoms encountered in these cases was probably dependent on the associated colonic stasis and catarrhal colitis rather than on the melanosis coli.

10. The pigmentation of the colon herein described is not permanent. Stopping the laxative and instituting a colon stasis regimen caused the pigmentation to disappear in fifteen of eighteen cases. From four to twelve months is apparently necessary to its complete disappearance.

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Maturity and the Whole Personality.—In recent years psychiatry has recognized the importance of a study of the personality and has tried to determine its share in the psychotic reaction from the point of view of personality reactions. By personality I mean the psychobiologically integrated unit which has developed and is developing during life. One can see an increasing organization of the personality from infancy to maturity, but not all personalities reach full organization, and in many people certain aspects of the personality are less organized or integrated. In the feeble-minded group there is primarily a lack of organization of the intellectual aspect. In other types of psychopathic make-up, other parts of the personality may be less developed and organized. Physical and mental development in the broadest sense are not parallel. It is also known that some organs of the body develop sooner than others. One speaks of maturity, therefore, when the whole personality has reached a degree of organization which harmonizes the various strivings with integration of emotional and intellectual resources, utilizing the experiences of the past and adjusting imagination and anticipation to reality.—Diethelm, Oskar: Nonorganization and Disorganization of the Personality During Psychoses, *Arch. Neurol. & Psychiat.* 29:1289 (June) 1933.

THE SURGICAL TREATMENT OF
ARTERIAL EMBOLISM

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MINNEAPOLIS

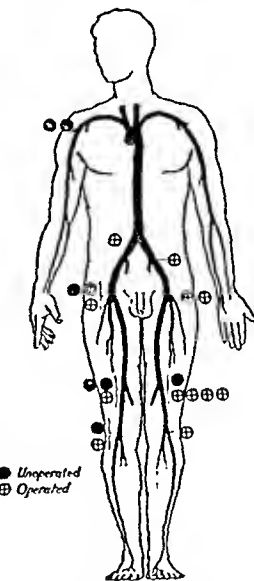
The history of the surgical treatment of arterial embolism is a comparatively short one. This is somewhat difficult to explain in view of the fact that the principles of vascular surgery have been developing since the time of John Hunter. The first surgeon of record to attempt to remove an embolus by arteriotomy was Ssabanejew.¹ In 1895, because of the impending gangrene of a leg, he opened the femoral artery and endeavored to remove the embolus. He was not successful, and after amputation of the leg the patient died. The first completely successful operation was performed by Labey² in 1911, when he removed an embolus from the femoral artery six hours after the occurrence of symptoms. The chronology of attempt and success is detailed at length in the article which Einar Key³ wrote in 1921. At this time, Key reported the first series of importance, and it is on the encouragement afforded by this report that this phase of vascular surgery so promptly and vigorously grew. In 1928, the literature of the subject was again reviewed by Petitpierre,⁴ who was able to assemble 118 cases. From this time to the present there have been frequent additions, but the total reported is made up mostly of groups of two and three cases. Because of this, and of the diversity of individual judgment and procedure, analysis of results and observations is difficult.

With the idea in mind that larger individual series might be worthy of record purely as statistical material, I am reporting a series of twenty cases of arterial embolism that have come under my observation. All but two of these cases come from the wards of the Minneapolis General Hospital. Through the careful supervision of Dr. George Fahr, chief of the medical service, and his associates, it has been possible to collect a relatively large series during the space of three years. While the number of cases is yet too small to serve as the basis of any very critical analysis, nevertheless, a few general conclusions may be drawn.

With the exception of rare instances of detached atheromatous plaques, the larger animal parasites or artificially introduced foreign bodies, arterial emboli have their origin in cardiac thrombosis. Bull,⁵ in a survey of the material at the Riks Hospital, found fifteen cases of arterial embolism in 6,140 autopsies. Of these, thrombus formation in one or more of the cardiac cavities could be demonstrated in thirteen. It is true, of course, that thrombosis may occur at other points in the vascular tree, but as these are not so easily subject to dislodgment they furnish a much less frequent source of embolism.

Welch⁶ and later Aschoff and Fåhræus⁷ showed that three factors are involved in the development of a

thrombus; viz., a change in the surface of the vessel wall, changes in the physicochemical constitution of the blood, and a local change in the rate of flow. Of these, the last factor is perhaps the most potent. From these data it is readily seen that the heart chambers during the stage of derangement offer the ideal site for thrombus formation. In the presence of at least two of these three factors, thrombus formation is begun by the precipitation and the agglutination of blood platelets at some point on the endothelial surface. As the process grows, first red cells become entangled and later white cells. Eventually, the endothelial cells become injured, fibrin ferment is liberated and fibrin results, which aids in the organization and rapid enlargement of the mass. In this manner, the first to develop is a red thrombus, so called because of the preponderance of red cells, and finally the mature structure, the white thrombus, which owes its appearance to a superabundance of leukocytes. The distinction between red, white and mixed thrombi is the age and the state of development as well as the constitution. This is of importance in the light of subsequent developments related to embolism.



Distribution of emboli reported in this series.

When a thrombus arises within the heart cavity, by reason of rate of growth and disproportion between surface attachment and mass, it frequently becomes dislodged by the agitation of the disorganized heart mechanism. The detached mass passes into the arterial circulation as an embolus. As the diminution in caliber of the arteries is not a constant and uniform one but is most abrupt and distinct at points of major bifurcation, emboli tend to lodge in these localities. When such lodgment occurs, the irritation caused results in a constrictor spasm, which more or less completely occludes the lumen. This spasm extends distally and is probably the origin of the initial pain of which the patient complains at the onset. Although this is undoubtedly augmented by the pain of the anoxemia that follows, it is only on the existence of the extensive spasm extending peripherally that the failure of coincidence in location of pain and embolus can be explained. Because of the irregular outline of most emboli, obstruction of the circulation is not immediate. As a result, there is a local disturbance of blood flow with the attendant factor of irregularity of surface, providing for the development of a secondary thrombus. Accordingly, there grows distally in the direction of the blood stream a secondary thrombus, which corresponds to the "schwanzteil" described by Aschoff. This may vary from one of a few centimeters to one of great length. Nyström⁸ has reported a secondary thrombus, 86 cm. in length. Thrombosis does not occur proximally for more than a few millimeters, and the problem of retrograde thrombosis, in the absence of generalized sepsis, does not arise. Eventually, the affected artery becomes completely occluded, either at the point of lodgment of the embolus or by

¹ From the Department of Surgery, University of Minnesota Medical School and the Minneapolis General Hospital.

² Ssabanejew: Zur Frage der Gefässnaht Russki Chir. Arch. 1895. p. 625.

³ Mosay, Ernst, and Dumont, J.: Embolie fémorale au cours d'un rétrécissement; mitral pur; artériotomie; guérison, Bull. Acad. de méd., Paris 66: 358, 1911.

⁴ Key, Einar: Ueber Embolektomie als behandlungs Method bei embolischen Zirkulationsstörungen der Extremitäten, Acta chir. Scandinav. 54: 339 (Jan.) 1922.

⁵ Petitpierre, Marco: Ueber Embolie der Extremitäten artieren, Schweiz. med. Wchnschr. 58: 700 (July 14) 1928.

⁶ Bull, P.: Emboli and Embolic Gangrene of the Extremities, Acta chir. Scandinav. 54: 315 (Jan.) 1922.

⁷ Welch, in A System of Medicine, by Thomas Clifford Allbutt, London, Macmillan Company 6: 155, 1899.

⁸ Fåhræus, Robin, and Lindqvist, Torsten: Viscosity of Blood in Narrow Capillary Tubes, Am. J. Physiol. 96: 562-568 (March) 1931.

⁸ Nyström, Gunnar: Zur Prognose und Methodick der Embolektomie, Acta. chir. Scandinav. 60: 229, 1926.

secondary thrombosis throughout its length. It is probable that the completeness with which an artery is occluded at the time an embolus lodges is of far greater importance in the failure of extensive secondary thrombosis development than the lapse of time following the occurrence of embolism.

After the initial blanching of the extremities, which is due to arterial spasm rather than to complete obturation, the skin assumes first a dusky hue and then a bluish mottling, which is attended by coldness and frequently by loss of superficial and deep sensibility. If the upper portion of a major vessel is involved, the tendon reflexes are frequently lost. The end-result is gangrene to a level determined by the collateral circulation. It is toward the development of such gangrene that treatment is directed. Key, Nyström and others have mentioned and, with reservation, have advocated the employment of massage with the idea of dislodging and forcing the obstruction distally to such point as circulation could be maintained by the collateral supply, and, while this procedure is apparently feasible and is supported by several reported cases, it is not the procedure of choice in the majority of instances.

The surgical treatment of arterial embolism consists in the exposure of the affected vessel at the site of obstruction and the removal of the obstructing embolus and thrombus by arteriotomy. In the twenty cases that I have had under my observation, I have performed this operation eleven times. The material here presented consists of eleven surgical cases and eight which were considered nonsurgical. In one case, which remains unclassified, the femoral vein was ligated and the artery was not opened. Although the procedure terminated successfully, it is not included in the operated group.

The cases were distributed equally between males and females. The age of incidence is that at which a break in cardiac compensation most frequently occurs, namely, between the sixth and seventh decade, the corrected average being 65 years. Of the total number of cases under observation, fifteen presented definite histories of previous cardiac disorder. An attempt was made to determine the duration of cardiac disease previous to the onset of embolism, but these observations varied within such wide limits that no causal time relations could be established. There were four patients without previous or existing heart disease who developed arterial emboli in the presence of generalized infection. The one remaining case to be accounted for developed spontaneously in the absence of any other demonstrable disease process. The preponderance of cases of cardiac origin is in accordance with the literature and tends to confirm the belief that the most important factor in the development of thrombosis is a local disturbance in the velocity of blood flow.

The symptoms and signs of embolism itself were uniform in character but varied considerably in degree and location. In all cases, sudden severe cramplike pain was the outstanding feature of onset. The location of this pain was invariably at some point distal to the arterial obstruction and was of no value in localization other than to identify the extremity involved. The later developing anesthesia was variable in extent, depending on the adequacy of the collateral circulation, and was equally valueless as a localizing symptom.

Of the objective signs, pallor, coldness and subsequent discoloration, while corroborating the diagnosis of embolism, were as confusing as the subjective symptoms when by their aid alone an attempt was made to

identify the exact point of lodgment, as they too were dependent on the immediate degree of occlusion of the artery, the extent of development of secondary thrombosis, and the adequacy of collateral circulation. Gangrene in no instance extended beyond the middle third of the calf. This was equally true of the nonoperative cases and of the operative ones. The most valuable finding was the presence or absence of pulsation in the affected vessel. This definitely located beyond question the exact point of obstruction. In the earlier cases of this series, an oscillometer was used to determine the presence or absence of pulsation, but the results were so modified by the collateral circulation as to be confusing, and for this reason it was abandoned. The observations at autopsy and at operation proved the wisdom of this course. It was found that the majority of emboli lodge in the vessels of the lower extremities, only two being found in the arm, both of these occurring in the right axillary vessel. There appears to be no predilection for one side or the other, the two being about equally affected. Of the operative cases, the left lower extremity was affected seven times and the right three, but in so small a number of cases this cannot be considered of great importance. In our series, the point of most frequent occurrence is in the lower portion of the femoral artery where it passes through the adductor muscle to enter the popliteal space. The next common site is at the branching of the profunda femoris. It is worthy of note that in every instance of embolism the point of lodgment was at the branching of a major vessel. With this fact in mind, together with an accurate observation of the presence or absence of pulsation, one can make a definite estimate of localization by inference alone.

A consideration of the end-results in both the non-operative and the operative cases is interesting, but by reason of the nature of the material, as well as of its amount, the conclusions arrived at must be correspondingly tentative. Of the total number of cases here presented, operation was not performed in eight, while eleven operations were performed in the remaining ten. The division of the material is an arbitrary one and not dependent entirely on judgment as to operability. This is of importance, as it affords comparison between selected and unselected material. Much has been written as to the necessity for early operation, and there can be no question that operation soon after the lodgment of an embolus not only makes its removal easy but also avoids the complicating injury to the vessel wall and secondary thrombosis. In this series, the lapse of time between the initial symptom and the operation varied from one and one-half hours to seventy-two hours, in all but three the time being twelve hours or more. Nevertheless, of the eleven patients, the circulation was restored in eight, including one at thirty-six hours and one at seventy-two hours. This would indicate that other factors such as blood pressure, velocity and the completeness, and location of the obstruction were of greater importance in determining the prognosis. While it was possible to restore the circulation, and by this I mean not only pulsation in the immediate neighborhood of the arteriotomy but also warmth and color to the extremities, in eight of the patients, unfortunately only three survived to be discharged from the hospital. This rather gloomy outlook is somewhat lightened by observations on the patients who were not operated on. Of these, seven, or 87.5 per cent, died within a period of from one to fourteen days following the initial symptoms of embolism. It is of interest to

note that the length of survival in the two groups is much the same, which would give some basis for the statement that surgery in itself is not properly responsible for the mortality in this form of treatment. As the end-result of the two series shows an 87.5 per cent mortality in the cases in which operation was not performed and a 72.7 per cent mortality in the cases in which it was performed, with a corresponding 72 per cent of immediate restoration of circulation, it would appear that embolectomy is a proper and reasonable undertaking. In the light of the experience as represented in the foregoing data, I believe that the following conclusions are sound.

Arterial embolism is not an uncommon phenomenon and should be considered as a possible complication of cardiac derangement. Multiple emboli, although occurring at intervals, are not sufficiently frequent to exclude consideration of surgical treatment. In the diagnosis of this condition, age, sex and physical conformation are of little importance. The most common and outstanding element of the previous history is cardiac disease, attended by auricular fibrillation. The cardinal presenting symptoms are those of sudden cramplike pain in an extremity, followed by pallor, then cyanosis and coldness, and terminating in loss of sensation. The most frequent site of localization is the lower portion of the femoral artery. The localization of the pain and the subsequent limits of pallor, discoloration, coldness and anesthesia may serve to identify the extremity affected but are of little value in determining the exact point of lodgment of the embolus. Localization is best attained by palpation of the suspected vessel.

The prognosis of the individual case depends primarily on the status of the underlying disease process. It is not advisable to subject every patient to operation even though his general condition is good. The collateral circulation of the extremities is such that emboli lodging in the brachial or even in the axillary artery are attended with more than an even chance of recovery without operation. Likewise, emboli lodging at the bifurcation of the popliteal vessel will not require surgery. In fact, many of the successes attributed to operation at this site are probably due to an adequate collateral circulation.

Aside from specific medication, preliminary treatment should be directed toward maintaining blood pressure and velocity of blood flow, as it is on these factors in part that the success of the operative procedure depends. For this reason, local anesthesia is the method of choice. The incision should be made over the artery at the first major bifurcation below the point of definite pulsation. The vessel should be carefully isolated and not lifted from its bed. Because of the attached secondary thrombus invariably present, pressure should not be made on the vessel distal to the embolus. It will be noted that above the embolus the vessel is round, distended and pulsating, and at the lower limits of pulsation the firm mass of the embolus can be easily palpated. Below this point the vessel will be somewhat constricted, depending on the thickness of the wall and the degree of sclerosis present. Before the artery is incised, it should be grasped, proximal to the embolus, firmly by the fingers of an assistant and not by a clamp of any kind, as this tends to injure the walls even though carefully applied. The wound is then flooded and sponged with sodium citrate solution to inhibit coagulation, and an incision one-third longer than the diameter of the vessel is made directly over the embolus. If the embolic mass does not promptly extrude,

it may be teased out with fine forceps, the back pressure of the peripheral vessels being allowed to force out the long tail portion of the attached secondary thrombus. Only when this is complete and there is a free flow of blood, indicating a successful removal, may the artery be grasped below the point of incision. When the flow of blood from above and below the incision is controlled, the wound is approximated, edge to edge, by fine silk arterial sutures.

If a mistake in diagnosis has occurred, and the exact site of the embolus has not been identified, and the mass presenting through the incision in the arterial wall is red and soft, indicating that only the secondary thrombus is accessible, only such portion as lies distal to the opening should be removed and the wound closed. A second arteriotomy should then be performed at the next major bifurcation above this point.

Attempting to remove an embolus and attached thrombus from a point below the site of impaction is difficult and not often successful. For this reason, in embolism of the aorta or iliac vessels direct approach through the abdomen is preferable to the retroperitoneal route. Because of the difficulty I have experienced in dislodging emboli, even with direct exposure, any procedure such as massage or the milking of a vessel distally from the point of obstruction seems not only an illogical procedure but one inviting disaster. Following completion of the operation, the extremity should be placed at rest and kept warm. In the event of gangrene, nothing is to be gained by early amputation. In no case have I seen gangrene extend higher than the middle third of the calf, and I believe that in no instance has the patient been jeopardized by allowing demarcation to become well established.

CONCLUSION

As others have said, there is no simple operation in surgery so eminently satisfactory or attended by such potentiality for good as arteriotomy for arterial embolism.

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THE UNCONTROLLABLE CAUSES OF DEATH IN DIABETIC COMA

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The vital statistics of New York City show that the standardized death rate of diabetes has risen from 17.3 per hundred thousand in 1901 to 27.9 per hundred thousand in 1931. The introduction of insulin in 1923 was accompanied by a slight recession in mortality which has since been entirely lost. The beneficial effect of insulin has been manifested only in the lower age periods up to 35 years. From 35 to 44 years the curve has flattened out and above that age the diabetic death rate, particularly in women, has sharply risen. The cause of this increasing mortality despite the use of insulin is today the subject of widespread investigation from which no definite conclusions can as yet be drawn. I have therefore undertaken an analysis of the cases of diabetic coma in the adult wards of the Mount Sinai Hospital for the insulin period 1923-1933 in the hope of throwing some light on this phase of the problem.

The syndrome of diabetic coma is characterized by certain definite clinical and laboratory features, the most

characteristic of which are Kussmaul breathing and an alkali deficit. The definition of diabetic coma is not satisfactorily resolved by identifying it with acidosis. The state of unconsciousness is only roughly related to the reduction of serum bicarbonate. Consciousness may be retained with an extremely low carbon dioxide combining power of the blood. There may be persistent stupor and coma with the blood alkali well above the generally accepted critical levels. In other conditions, alkali deficits of the magnitude occurring in diabetic acidosis are not necessarily attended by a similar syndrome. There is little evidence to incriminate the mild anesthetic action of the acetone bodies. There is no correlation between the concentration of ketones in the blood and the profundity of coma.

I have endeavored, as far as possible, to limit the cases to those with carbon dioxide combining power of the blood below 20 volumes per cent, but the following instances are cited to show the difficulties of rigid classification:

CASE 1.—A woman, aged 56, was admitted in profound coma. The urine contained 2.5 per cent dextrose and large quantities of acetone and diacetic acid. The blood sugar was 280 mg. and the blood carbon dioxide was 20 volumes per cent. Insulin therapy was ineffective, the blood sugar rose to 470 mg. and she died in eighteen hours. The carbon dioxide combining power of the blood, determined ten hours and sixteen hours after admission, was 20 volumes per cent on each occasion. Autopsy revealed no cause for death other than diabetic coma.

CASE 2.—A woman, aged 50, with a three years history of diabetes, was admitted in deep stupor. The urine contained 8 per cent dextrose and a small amount of acetone. The blood sugar was 600 mg. The carbon dioxide combining power of the blood was 43 volumes per cent on admission and 51 volumes per cent when determined two hours later. Because of these figures the patient was not treated, although there was no other detectable etiologic factor; she died in circulatory collapse. Unfortunately, a postmortem examination was not obtained, but the free excretion of 8 per cent dextrose in the urine in association with a blood sugar of 600 mg. suggested that diabetes was the most likely cause of coma.

I have therefore selected the cases of diabetic coma which satisfied most of the essential criteria and which permitted no other diagnosis, either clinically or pathologically. On this basis, I have collected eighty-two reports of cases from the adult wards of the Mount Sinai Hospital for the period 1923-1933. Of this number, twenty-four patients could not be saved, a mortality of 29 per cent. This mortality is partly due to complications in themselves fatal, to the fact that some patients were admitted too late for effective treatment, and, in two early instances, to frankly inadequate insulin dosage. There are, however, a sufficient number with fatal outcome in which adequate supportive and specific therapy was given to prevent me from considering diabetic coma a closed problem.

The therapy of diabetic coma in this institution has not differed essentially from that practiced elsewhere. Gastric lavage, a cleansing enema and the usual supportive procedures have been part of the routine. Fluids have been administered as liberally as possible by mouth, and if fluids were not retained they were given by rectum, subcutaneously and intravenously. The average insulin dosage administered in the fatal cases was 174 units in twenty-four hours, against an average of 124 units for the first twenty-four hours in the nonfatal cases. Although these figures are lower than those used by many others, it is well to remember that many fatalities occurred within a few hours after admission. We have believed it advisable to give from 1 to 2 Gm. of dextrose with each unit of insulin.

Race and sex were not important as determining factors in prognosis. In 88 per cent of the fatal and 86 per cent of the nonfatal cases the patients were Jews. In 64 per cent of the fatal and 68 per cent of the nonfatal cases the patients were females. As may be seen from the accompanying table, however, age had an unquestionable influence on the mortality rate.

It is to be noted in this connection that Joslin reported a negligible mortality in juvenile diabetic coma. There has been only one death from this cause in the pediatric service of the Mount Sinai Hospital in the last six years. It is evident that in large part the high mortality rate reported in this paper is due to the age incidence and the elimination of juvenile diabetes from our statistics. There were only six deaths in our forty-nine cases of diabetic coma in patients under the age of 40, a mortality of 12 per cent; whereas we lost eighteen of our thirty-three patients over this age, a mortality of

Age Incidence

| Age | Number of Cases | Number of Fatalities |
|---------------------|-----------------|----------------------|
| 14 to 20 years..... | 10 | 2 |
| 21 to 30 years..... | 16 | 3 |
| 31 to 40 years..... | 14 | 1 |
| 41 to 50 years..... | 12 | 6 |
| 51 to 60 years..... | 14 | 7 |
| 61 to 70 years..... | 6 | 4 |
| 71 to 80 years..... | 0 | 0 |
| 81 to 90 years..... | 1 | 1 |

54 per cent. These figures help one to understand the vital statistics of New York City, which show that the introduction of insulin has favorably affected the mortality of diabetes only in the group under the age of 35 years.

For the purpose of more detailed analysis, I have divided the fatal cases of diabetic coma into four groups:

Group 1. Cases not adequately treated.

Group 2. Cases in which the diabetic coma was associated with conditions fatal in themselves.

Group 3. Cases in which diabetic coma was the prime cause of death, with associated conditions as contributory factors.

Group 4. Cases of uncomplicated diabetic coma.

The first two groups may be briefly presented:

GROUP 1

These patients entered the hospital early in 1923, when there was a limited supply of insulin available.

CASE 3.—A woman, aged 54, with an eight years history of diabetes, entered in profound coma. The blood sugar was 440 mg. and the carbon dioxide of the blood was 9 volumes per cent. The patient was given 37 units of insulin but did not recover consciousness and died in circulatory collapse.

CASE 4.—A woman, aged 52, with an eighteen months history of diabetes, went into coma twenty-four hours before admission. She was in profound coma; breathing was Kussmaul in type and there was evidence of a bilateral bronchopneumonia. She was given 37 units of insulin but did not respond. Her temperature steadily rose to 105 F. and she died at the end of twelve hours.

GROUP 2

CASE 5.—A woman, aged 82, with an eight years history of diabetes, had had a gangrenous foot for several weeks. The patient went into coma twenty-four hours before admission and entered in a state of stupor with a blood sugar of 300 mg. and a blood carbon dioxide of 18 volumes per cent. Adequate fluids were given by gavage and by rectum, and 150 units of insulin was administered daily. Although the carbon dioxide of the blood rose to 29 volumes per cent, the patient never fully regained consciousness and died on the fourth day. Death and persistent coma were attributed to cerebral arteriosclerosis.

CASE 6.—A man, aged 24, with a one year history of diabetes, had suffered from an extensive furunculosis for one week. He went into coma twenty-four hours before admission and entered the hospital in a semiconscious state with Kussmaul breathing, a blood sugar of 380 mg. and a blood carbon dioxide combining power of 14 volumes per cent. In the course of the first twenty-four hours the patient was given 2,200 cc. of fluids, 240 Gm. of dextrose and 90 units of insulin. He recovered consciousness and after the first day the carbon dioxide combining power of the blood was always above 30 volumes per cent, but he died suddenly on the fourth day in circulatory collapse. Autopsy revealed a generalized staphylococcic infection with metastatic foci in the lungs and subcutaneous tissues.

CASE 7.—A woman, aged 45, with a two years history of diabetes, went into coma twenty-four hours before admission. She was in profound stupor with a blood carbon dioxide combining power of 16 volumes per cent and a blood sugar of 322 mg. There was definite clinical evidence of meningitis and on lumbar puncture purulent fluid was obtained that contained pneumococci. There was no response to treatment and the patient died in twelve hours. A postmortem examination revealed an acute mastoiditis and a purulent meningitis.

CASE 8.—A man, aged 47, with a three and a half years history of diabetes, had had attacks of angina pectoris over a period of nine months. For three days the diabetes was satisfactorily controlled on a diet of 100 Gm. of carbohydrate, 60 Gm. of protein, and 100 of fat, with 40 units of insulin daily. An electrocardiogram showed no definite changes. On the night of the fourth day the patient suddenly went into profound coma with typical Kussmaul breathing. In the course of the next nine hours he was given 8 ounces of orange juice by mouth, 500 cc. of 5 per cent dextrose intravenously and 115 units of insulin. He had recovered consciousness, when he died suddenly as the result of a coronary thrombosis.

CASE 9.—A man, aged 58, with a one year history of diabetes, suddenly went into coma four hours before admission. He was in profound shock with a blood sugar of 400 mg. and a blood carbon dioxide combining power of 12 volumes per cent. He died within a half hour. At autopsy, an acute tuberculous bronchopneumonia was found.

CASE 10.—A man, aged 62, with a four years history of diabetes, had been in coma for three days. On admission he was in profound shock; the urine contained 4.5 per cent of dextrose and large quantities of acetone. The blood sugar was 255 mg. and the carbon dioxide combining power of the blood was 20 volumes per cent. There was no response to treatment and the patient died in two hours. At the postmortem examination there was an extensive tuberculosis of the left upper lobe with gangrenous cavitation.

CASE 11.—A man, aged 53, was known to have diabetes for one month. One week before there had developed a multiple abscess in the thigh that had been associated with increasing drowsiness. On admission, the patient was semistuporous and breathing was Kussmaul in character. The blood sugar was 480 mg. and the carbon dioxide combining power of the blood was 18 volumes per cent. He was given 2,000 cc. of saline solution subcutaneously, 100 Gm. of dextrose, and 340 units of insulin. There was no response to treatment; the temperature rose steadily from 100 to 105.8 and he died twenty hours after admission. Autopsy revealed an acute splenic tumor, and death was attributed to sepsis.

CASE 12.—A woman, aged 21, a Puerto Rican, had no previous history of diabetes. For twenty-four hours before admission she had complained of nausea, vomiting and abdominal pain and had gone into coma two hours previously. She was extremely dehydrated and in profound stupor. The deep reflexes could not be elicited and breathing was Kussmaul in type. Her blood sugar was 120 mg. and the carbon dioxide combining power of the blood was 10 volumes per cent. The urine contained a trace of acetone and 2 per cent of dextrose. She was given a continuous intravenous drip of 5 per cent dextrose in saline solution and in the course of twelve hours received 2,100 cc. of this solution and 160 units of insulin. She remained in coma in spite of the fact that the urine became acetone free. Her circulatory condition became steadily worse. The blood pressure, which was 134 systolic and 84 diastolic, at first dropped to 120 systolic and zero diastolic and then to 84

systolic and 20 diastolic. Her pulse became imperceptible, the extremities cold and cyanotic and the patient died in shock twelve hours after admission. Autopsy revealed a tuberculous bronchopneumonia.

GROUP 3

CASE 13.—A man, aged 48, with a three months history of diabetes and a carbuncle of the neck of seven days' duration, went into coma twelve hours before admission. He was semiconscious with typical Kussmaul breathing. His pulse was weak and thready, the extremities were cold, and the clinical picture was that of shock. His blood sugar was 580 mg. and the carbon dioxide combining power of the blood was 10 volumes per cent. In the course of twelve hours he was given 1,900 cc. of saline solution intravenously and by rectum, 100 Gm. of dextrose and 70 units of insulin. At the end of nine hours the blood sugar had dropped to 350 mg. and the carbon dioxide combining power of the blood had risen to 31.4 volume per cent. He remained comatose, however, and in spite of the improvement in blood figures his vasomotor collapse became more profound and he died in pulmonary edema at the end of twelve hours.

CASE 14.—A woman, aged 63, with a one year history of diabetes, had had an abdominal sinus secondary to an empyema of the gallbladder for six months. On admission, the blood sugar was 300 mg. and the carbon dioxide combining power of the blood was 30.9 volumes per cent. For eight days she remained sugar free on a diet of 40 Gm. of carbohydrate, 50 Gm. of protein and 120 Gm. of fat, without insulin. On the ninth day she suddenly went into profound coma. The blood sugar rose to 480 mg. and the carbon dioxide combining power of the blood dropped to 15.5 volumes per cent. She received 1,000 cc. of 5 per cent dextrose by rectum and 120 units of insulin. Her temperature steadily rose to 106; there was absolutely no response to treatment, and she died in eighteen hours without recovering consciousness. Autopsy revealed a terminal bronchopneumonia as the probable cause of the hyperpyrexia.

CASE 15.—A man, aged 47, with a six months history of diabetes, had had an acute respiratory infection for one week. He was admitted in deep coma from which he could not be aroused. The blood sugar was 250 mg. and the carbon dioxide combining power of the blood was 11 volumes per cent. Within nine hours he received 1,800 cc. of saline solution by rectum and by vein, 125 Gm. of dextrose and 125 units of insulin. There was no response to treatment at any time, and he died in nine hours in profound vasomotor collapse. A postmortem examination revealed a lobar pneumonia involving the right lower lobe.

CASE 16.—A man, aged 60, with a two months history of diabetes, had vomited for two days and entered in profound coma. He was markedly dehydrated, his pulse was barely perceptible and his extremities were cold and cyanotic. Breathing was Kussmaul in character. He was given 1,200 cc. of 5 per cent dextrose intravenously and 110 units of insulin. Under this treatment his blood sugar dropped from 500 mg. to 90 mg. and the urine became acetone free. He remained in a state of profound shock from which he could not be aroused and died in ten hours. Autopsy revealed a purulent mastoiditis and atrophy of the pancreas. Death was attributed to diabetic coma.

GROUP 4

CASE 17.—A youth, aged 17, with a two months history of diabetes, lapsed into coma eight hours before admission. When seen, he was in deep stupor; his breathing was Kussmaul in character, his blood sugar 640 mg. and the carbon dioxide combining power of his blood 12 volumes per cent. After 300 units of insulin, his blood sugar had risen to 760 mg. At the end of eight hours he had received 600 units of insulin, his blood sugar was 420 mg., and he was definitely out of coma. After one hour, his temperature began to rise and before he died, two hours later, it had reached 106, further insulin being absolutely ineffective. Autopsy revealed atrophy of the pancreas but no other cause for the coma or the terminal hyperpyrexia.

CASE 18.—A woman, aged 55, with a six years history of diabetes, had been semicomatose for two days. On admission, she was stuporous and markedly dehydrated. Her blood sugar was 600 mg. and the carbon dioxide combining power of her

blood was 21 volumes per cent. She was given 2,500 cc. of fluids, 175 Gm. of dextrose and 140 units of insulin, and at the end of twenty-four hours she completely recovered consciousness. The carbon dioxide combining power of the blood had risen to 41.6 volumes per cent and she seemed well on the way to recovery when, on the third day, she suddenly lapsed into coma with profound vasomotor collapse; she became cold, pulseless and cyanotic; her blood urea rose to 43.7 mg. and she died in four hours.

CASE 19.—A woman, aged 41, with an eight years history of diabetes, suddenly lapsed into coma two hours before admission. She was in profound stupor; the deep reflexes could not be elicited and her breathing was Kussmaul in character. Her blood sugar was 318 mg. and the carbon dioxide combining power of her blood was 12 volumes per cent. She was given 1,800 cc. of fluids, 100 Gm. of dextrose and 120 units of insulin, but there was no response to treatment. Her temperature steadily rose to 105.8 and she died twelve hours after admission without recovering consciousness.

CASE 20.—A woman, aged 56, with no previous history of diabetes, had been acutely ill for two days and was admitted in a stuporous irrational state. Her blood sugar was 280 mg. and tests of the carbon dioxide combining power of the blood, repeated three times in the eighteen hours she lived, were 20 volumes per cent. She was given 2,800 cc. of fluid, 180 Gm. of dextrose and 160 units of insulin, but treatment was ineffective. The temperature steadily rose to 106 before death. A postmortem examination revealed no cause other than diabetic coma to account for her death or for the terminal hyperpyrexia.

CASE 21.—A woman, aged 42, with no previous history of diabetes, was admitted with a mild tonsillitis. The urine contained 8 per cent dextrose and a small amount of acetone. On the following day she developed acidosis and went into coma. Her blood sugar was 500 mg. and the carbon dioxide combining power of the blood at the onset of coma was 21.4 volumes per cent. She was given 1,000 cc. of saline solution intravenously and 1,000 cc. by rectum, 50 Gm. of dextrose and 280 units of insulin. There was no response to treatment. In the six hours before death her temperature rose from 99 to 105, and she died nine hours after going into coma.

CASE 22.—A woman, aged 24, was known to have had diabetes for three years and had gone into coma on three previous occasions. The present attack was precipitated by dietary indiscretions and began twenty-four hours previously with a sharp pain in the chest. She was in profound stupor; the deep reflexes could not be elicited, and her breathing was Kussmaul in character. Her blood sugar was 564 mg. and the carbon dioxide combining power of the blood 14.2 volumes per cent. She was given 1,500 cc. of 5 per cent dextrose intravenously and 220 units of insulin, but treatment was ineffective; her temperature steadily rose to 106.2, and she died in twelve hours, without recovering consciousness.

CASE 23.—A woman, aged 50, with a three years history of diabetes, went into coma four hours before admission. She was in deep stupor and in a profound state of shock, but breathing was not Kussmaul in character. The urine contained 8 per cent dextrose and moderate amounts of acetone. Her blood sugar was 600 mg. and the carbon dioxide combining power of her blood on two occasions was 43 and 51 volumes per cent. Because of the blood carbon dioxide figures, she was not treated with insulin and died in twelve hours in circulatory collapse.

CASE 24.—A youth, aged 18, with a two years history of diabetes, went into coma twenty-four hours before admission. He was in deep stupor, and breathing was Kussmaul in character. His blood sugar was 468 mg. and the carbon dioxide combining power of his blood 10 volumes per cent. He was given 2,000 cc. of saline solution, 100 Gm. of dextrose and 400 units of insulin in the eight hours he lived, but there was no response to treatment and his temperature rose to 105.2 before death.

CASE 25.—A man, aged 65, with a six weeks history of diabetes, had vomited for thirty-six hours and was admitted in profound coma and shock. He was markedly dehydrated, cold and cyanotic, and his pulse was barely perceptible. The urine contained 6 per cent dextrose and large quantities of acetone. His blood sugar was 540 mg. He was given 1,000 cc. of

5 per cent dextrose intravenously and 120 units of insulin. His blood sugar dropped to 296 mg., but he continued to vomit; his vasomotor collapse became more marked and he died in pulmonary edema five hours after admission.

CASE 26.—A woman, aged 37, with no previous history of diabetes, had lost weight for two months. She went into coma twelve hours before admission following an alcoholic debauch. She was in profound coma; the deep reflexes could not be elicited, and there was typical Kussmaul breathing. Her blood sugar was 470 mg., the carbon dioxide combining power of her blood 8 volumes per cent, and her leukocyte count 19,000. At the end of ten hours she had received 2,200 cc. of fluid intravenously, 240 Gm. of dextrose, and 180 units of insulin, but she remained in profound coma. Her temperature at this time was 101 and her blood pressure 120 systolic and 60 diastolic. At the end of eighteen hours, she had received 3,950 cc. of fluids and 275 units of insulin. The carbon dioxide had risen to 13 volumes per cent and she was still in deep coma. Her blood pressure was well maintained, but her temperature was steadily rising. At the end of twenty-two hours she had received 4,450 cc. of fluids and 335 units of insulin, but her temperature had risen to 105 and the carbon dioxide combining power of the blood was 10 volumes per cent. She died at the end of twenty-four hours. Culture of the blood taken two hours before death was negative. Autopsy revealed atrophy of the pancreas and chronic gastritis but no cause for the hyperpyrexia.

It is my purpose in presenting these protocols to analyze the causes of coma mortality in a general hospital. Thirty-three per cent of the deaths were associated with conditions fatal in themselves and were therefore unavoidable. In this group, coma is only of secondary importance and its control does not affect the outcome.

Nineteen cases were complicated by infections and of these ten were fatal. The mortality of diabetic coma associated with infections was therefore 52 per cent. Tuberculosis and pyogenic infections are of most serious consequence. Among the sixty-three uncomplicated cases, the mortality was only 22 per cent.

There is a tendency to assume that the problem of diabetic coma has been solved by the introduction of insulin and to attribute death in coma to mistreatment and negligence. I believe, however, that the protocols presented here confirm recent studies which indicate that there are factors of great importance other than the control of carbohydrate metabolism and the over-coming of ketosis by insulin, and that an appreciable coma mortality is inevitable in a general hospital even with adequate treatment. Examination of our protocols, for the purpose of analyzing the mechanism of death, reveals that the patients with diabetic coma died in one of two ways: either in vasomotor collapse (shock) or in a terminal hyperpyrexia. The so-called shock theory of diabetic coma has been the subject of intensive investigation in recent years. The factors involved have been studied by Atchley,¹ Peters² and their co-workers, and through their efforts the mechanism has been explained in part. Because of its importance in comprehending the problem of coma, I take the liberty of briefly summarizing their work.

1. Atchley, D. W.: Medical Shock, J. A. M. A. 95: 385 (Aug. 9) 1930. Loeb, R. F.; Atchley, D. W.; Richards, D. W., Jr., and Benedict, Ethel M.: A Study of the Electrolyte Metabolism in Diabetic Acidosis Induced in Human Subjects, J. Clin. Investigation (proc.) 10: 664 (Aug.) 1931. Atchley, D. W.; Loeb, R. F.; Richards, D. W., Jr.; Benedict, Ethel M., and Driscoll, Mary E.: On Diabetic Acidosis: A Detailed Study of Electrolyte Balances Following the Withdrawal and Reestablishment of Insulin Therapy, *ibid.* 12: 297 (March) 1933.

2. Peters, J. P.; Bulger, H. A.; Eiseman, Anna J., and Lee, Carter: Total Acid Base Equilibrium of Plasma in Health and Disease: VI. Studies in Diabetes, J. Clin. Investigation 2: 167 (Dec.) 1925. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry: I. Interpretations, Baltimore, Williams and Wilkins, 1931. Peters, J. P.; Kydd, D. M., and Eiseman, Anna J.: Serum Proteins in Diabetic Acidosis, J. Clin. Investigation 12: 355 (March) 1933. Peters, J. P.; Kydd, D. M.; Eiseman, Anna J., and Hald, Pauline M.: The Nature of Diabetic Acidosis, *ibid.* 12: 377 (March) 1933.

The breakdown of carbohydrate metabolism causes a greatly increased water excretion and an equally pronounced excretion of electrolytes normally present in the intracellular and extracellular fluids, particularly sodium and potassium. With the onset of acidosis, the excretion of ketones greatly augments the loss of water and electrolytes. As a result of the rapid loss of water, sodium and potassium, there develops a depletion of base in the body sufficient to cause dehydration of tissues, the alkali deficit becomes more marked and hyperventilation ensues with its tendency to depress blood pressure. There develops, at the same time, an increased permeability of the capillary walls with the tendency of fluids to pass from the vessels into the tissue spaces. In mild forms the transudate is relatively free from proteins, but in severe grades of acidosis permeability is so altered that proteins pass with the fluids from the blood stream. The diminished blood volume, lowered blood pressure, capillary stasis and escape of fluids from the blood stream combine to produce the syndrome of shock.

During acidosis the blood is inspissated, as indicated by the normal or high serum protein and hemoglobin and the lowered blood volume. This depletion of plasma fluid is due not only to diuresis, vomiting and hyperventilation but also to loss of fluid through the capillary walls. Recovery in part involves the restoration of serum volume, but to a certain degree serum volume and body water act as independent variables and the replenishment of body fluids does not necessarily result in the restoration of blood volume. Circulatory failure, particularly peripheral stasis, is responsible for the escape of fluids from the circulatory system and for the failure to remain in or return to the vascular bed. Such circulatory failure can develop when carbohydrate metabolism is proceeding in a satisfactory manner and the serum carbon dioxide is rising. In the production of coma, ketosis and alkali deficit play an indirect rôle by producing diuresis and overventilation. If shock is an important factor, the restoration of blood volume becomes an essential aim of treatment and the blood protein figures as a measure of hemoconcentration and the blood pressure are as important as the blood sugar and the carbon dioxide of the blood in directing treatment.

Clinically, hemodilution seems to mark improvement. Delay in restoration of serum volume and hemoconcentration is associated with the continuance or increase of symptoms. Cases are cited in which the blood protein figures were a more accurate reflection of the clinical picture than either the blood sugar or the blood carbon dioxide. In one instance, cited by Peters,² the patient remained in profound coma with a carbon dioxide combining power of the blood well above the critical level. The liberal administration of fluid restored consciousness without significant change in the blood carbon dioxide or the blood sugar, but with a marked decrease of blood protein.

In twenty of our eighty-two patients the predominating clinical picture was that of vasomotor collapse or shock. Eight of these died. It is perhaps significant that the average age incidence of the eight with fatal issue was 49.1 years, in contrast to that of 32.5 years in the twelve that recovered. It is important to note that in only two of the eight fatal cases was there a failure of response to insulin as indicated by acetone excretion, blood sugar or carbon dioxide combining power of the blood. In case 13, the blood carbon dioxide rose from

10 volumes per cent to 31.4 volumes per cent in nine hours, and the blood sugar dropped from 580 to 380 mg. The patient remained comatose in spite of this improvement and died three hours later in circulatory collapse. Patient 16 remained in deep coma and died in shock twelve hours after admission, although acetone had disappeared from the urine and the blood sugar had dropped from 500 to 90 mg. Patient 12 remained in coma with a blood sugar of 120 mg. after acetone had disappeared from the urine. The blood pressure fell from 134 systolic and 84 diastolic to 84 systolic and 20 diastolic and the patient died in shock. Patient 18 was well out of coma. The blood sugar had dropped from 600 mg. to 100 mg. and the carbon dioxide combining power of the blood had risen from 21 to 41.6 volumes per cent, when on the third day the patient suddenly went into circulatory collapse and died in four hours. Patient 2 remained in coma and died in vasomotor collapse in spite of blood carbon dioxide readings of 43 and 51 volumes per cent. Patient 25 continued to vomit and died in circulatory collapse five hours after admission, although the blood sugar had dropped from 540 to 296 mg.

The importance of the circulatory aspects of coma and their independence of carbohydrate metabolism is strikingly illustrated by the following case:

CASE 27.—A girl, aged 17 years, had been treated at home for several days with dextrose, orange juice and insulin. On admission she was markedly dehydrated and comatose. She could not be aroused and the deep reflexes could not be elicited. She was in profound shock, her pulse was barely perceptible and only a few cubic centimeters of urine could be obtained by catheter, which contained 0.6 per cent sugar and a trace of acetone. Her blood sugar was 125 mg., the carbon dioxide combining power of the blood 33 volumes per cent and her blood urea 38 mg. Her condition remained critical for twelve hours. She was then placed on a continuous intravenous drip of 5 per cent dextrose in physiologic solution of sodium chloride, averaging 2,000 cc. in twenty-four hours. With the establishment of diuresis, she regained consciousness and made a rapid and complete recovery, although her blood carbon dioxide was still only 32 volumes per cent after the disappearance of all her symptoms.

There would appear to be a definite indication for the intravenous administration of fluids in this group because of the discrepancy that may exist between blood volume and body fluids. However, four of the patients who died were so treated; patient 16 received 1,200 cc. of 5 per cent dextrose in physiologic solution of sodium chloride intravenously in ten hours; patient 13 received 500 cc. of physiologic solution of sodium chloride intravenously in addition to 1,400 cc. by rectum in twelve hours; patient 12 received 2,100 cc. of 5 per cent dextrose in saline solution by continuous intravenous drip in twelve hours; patient 15 received 1,000 cc. of 5 per cent dextrose in saline solution by intravenous drip and 800 cc. by rectum in nine hours. It may be said that in three of these cases the amount of fluid administered by vein was inadequate, yet one has the distinct impression that the permeability of the capillaries had been so altered that it was impossible for fluids to be retained in the vascular bed. When this stage was reached, restoration of carbohydrate metabolism and elimination of ketosis no longer sufficed to bring about recovery. The degree of dehydration in this group appears to be more unfavorable prognostically than either the degree or the duration of coma. With advancing years, the outcome of dehydration and shock is particularly unfavorable.

The immediate cause of death in the remaining cases of true coma was hyperpyrexia. In these cases the clinical condition fails to respond to treatment. As the temperature rises the insulin is without effect and the patient dies without regaining consciousness. Occasionally a different picture is observed: Patient 17, as a result of vigorous treatment, had been aroused from profound coma. At the end of nine hours he had completely recovered consciousness, the urine contained only traces of sugar and acetone and the temperature was 97.4. One hour later the temperature began to rise and reached 106 before death. Autopsy revealed no cause for hyperpyrexia. Of the eleven cases in this group, five came to autopsy. Case 14 presented a terminal bronchopneumonia; case 11, a splenic tumor and evidence of sepsis. Cases 17, 1 and 26 at postmortem showed no cause for hyperpyrexia. In case 26 only was a blood culture made during the febrile period and in this instance it was negative. Of the cases not coming to autopsy only one, which has not been reported in detail, showed clinical evidence of bronchopneumonia. In none of the others were there clinical conditions to which the hyperpyrexia could be attributed.

To summarize, in this group of ten cases with hyperpyrexia there was definite evidence of bronchopneumonia in two patients and sepsis in one. In the remaining seven there was no cause for hyperpyrexia established either clinically or pathologically. There is the possibility of a terminal blood stream invasion, and blood culture studies are necessary to eliminate this as an etiologic factor. The negative blood culture in the one case so studied suggests that hyperpyrexia may be an essential part of the clinical picture either as a concomitant of dehydration or as a condition analogous to the leukocytosis encountered in acidosis. Prognostically, the development of an unexplained hyperpyrexia in diabetic coma has been of fatal significance, for none of our patients presenting this clinical feature have recovered and in its presence insulin is without effect.

SUMMARY

Vital statistics for New York City show that the steadily rising death rate for diabetes has not been checked by the introduction of insulin. This increasing mortality is a still unsolved problem in which the increased incidence of diabetes and the associated vascular disease probably play major rôles. I have, therefore, undertaken an analysis of the cases of diabetic coma occurring in adults during the insulin period for the purpose of investigating this phase of the problem.

In the insulin period 1923-1933, eighty-two cases of diabetic coma were treated in the adult wards of the Mount Sinai Hospital. There have been twenty-four deaths, a mortality of 29 per cent. Two patients died in the early months of 1923 before an adequate supply of insulin was available. There were only ten fatal cases of uncomplicated diabetic coma. Eight cases were associated with conditions fatal in themselves. In this group, coma was of only secondary importance and its control had no effect on the outcome.

The age incidence is of the utmost importance. This group does not include children under 14 years of age, yet the mortality of the forty-nine patients under 40 years is 12 per cent in contrast to that of 54 per cent in the thirty-three patients over this age. I believe that these figures are significant, particularly as the vital statistics of the city of New York show that the introduction of insulin has favorably affected the diabetic mortality only in the group under 35 years of age.

Two factors, shock and hyperpyrexia, are of importance in the mechanism of fatal diabetic coma. The vasomotor collapse or shock presents the problem of restoration of blood volume. In a certain number of elderly individuals, the circulatory collapse may persist and death may result even after carbohydrate metabolism is proceeding normally and the ketosis has been overcome. In this particular group, insulin does not prevent a fatal issue and there is unavoidable mortality despite adequate treatment with insulin and fluids.

In those who died of hyperpyrexia, the etiologic factor was determined only three times. There is the possibility that one is dealing, in the remaining seven cases, with a terminal blood invasion, but in view of the negative blood culture in the case cited, this phenomenon, when it occurs, must be regarded as an essential part of diabetic coma, perhaps as a concomitant of dehydration. This type of hyperpyrexia may be of cerebral origin. In our experience, insulin has proved ineffective in the presence of hyperpyrexia. This is an added source of unavoidable mortality.

940 Park Avenue.

ROENTGENOGRAPHIC VISUALIZATION OF SUBPERIOSTEAL HEMORRHAGE IN INFANTILE SCURVY

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The criteria for the roentgenographic diagnosis of infantile scurvy have been adequately established and described by Fraenkel,¹ Hess,² Wimberger,³ Pelkan,⁴ McLean and McIntosh,⁵ Bromer,⁶ Kato⁷ and others. These authors have demonstrated that such scorbutic changes in the bones as increased density at the end of the diaphysis, increased density around the epiphyseal centers (rimming of the nucleus of ossification in the epiphysis), ground-glass appearance of the shaft of the diaphysis and of the body of the epiphysis, thinning of the cortex of the diaphysis, lateral spurs at the end of the diaphysis, and epiphyseal separation (separation of the metaphysis) can usually be seen on the roentgenogram before the occurrence of subperiosteal hemorrhage. Kato believes that the last mentioned is the one sign that is absolutely unique in infantile scurvy. While not, therefore, an early or even a necessary sign of scurvy, subperiosteal hemorrhage is more characteristic than any other.

Certain features of the roentgenographic appearance of this condition are, perhaps, not widely appreciated. Hess states that the inner surface of the periosteum in subperiosteal hemorrhage is frequently lined with newly formed bone which, in the course of healing, becomes heavier and is readily observed in roentgenograms.

From the Children's Hospital, and the Department of Pediatrics, University of Cincinnati.

1. Fraenkel, E.: *Fortschr. a. d. Geb. d. Röntgenstrahlen* 7: 231, 291, 1904; 10: 1, 1906.

2. Hess, A. F.: *Scurvy Past and Present*, Philadelphia, J. B. Lippincott Company, 1920.

3. Wimberger, H.: *Ztschr. f. Kinderh.* 36: 279, 1923; Medical Research Council, special report series No. 77, London, 1923, p. 95; *Fortschr. a. d. Geb. d. Röntgenstrahlen* 32: 17, 1924.

4. Pelkan, K. F.: *The Roentgenogram in Early Scurvy*, *Am. J. Dis. Child.* 30: 174 (Aug.) 1925.

5. McLean, Stafford, and McIntosh, Rustin: *Healing in Infantile Scurvy as Shown by X-Ray*, *Am. J. Dis. Child.* 36: 875 (Nov.) 1928.

6. Bromer, R. S.: *Am. J. Roentgenol.* 19: 112 (Feb.) 1928; *Pennsylvania M. J.* 34: 491 (April) 1931.

7. Kato, Katsuji: *Radiology* 18: 1096 (June) 1932.

This periostitis ossificans may result in the clot being surrounded by a perfect shell of bone, with bony col-



Fig. 1.—Condition in case 2, Dec. 1, 1932: increased zones of density at the ends of the diaphyses with distinctly lessened density in the adjacent portion of the diaphyses; increased densities of the periphery of the epiphyseal centers; ground-glass appearance of the shafts; and lateral spurs extending from the proximal ends of the tibias and the distal ends of the femurs; epiphyseal separation at the distal end of the femur and the proximal end of the tibia (seen in lateral view). There is no evidence of subperiosteal hemorrhage.

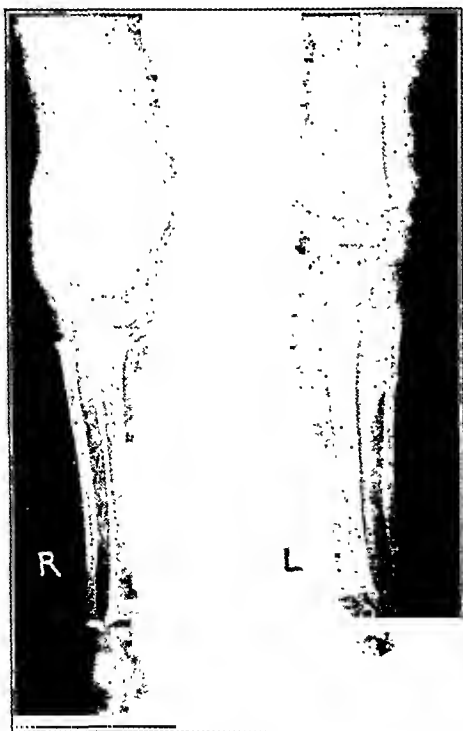


Fig. 2.—Condition in case 2, Dec. 12, 1932, after eleven days of treatment: calcification of subperiosteal hemorrhages.

umns penetrating the deeper layers. Kato points out that, as healing takes place, the hematoma gradually

becomes organized and calcification sets in. McLean and McIntosh note that neither the elevated periosteum nor the hemorrhage may be discoverable in the roentgenogram until healing begins and calcium is deposited. In fact, these authors assert that, if there is evidence of calcification of the detached periosteum or the hematoma, it may be assumed that an antiscorbutic agent has been administered; Wimberger also believes this. While not specifically stressed by Howitt,⁸ she shows the serial roentgenograms of the bones in a scorbutic monkey which well demonstrate the increasing calcification that takes place in subperiosteal hemorrhages after the administration of orange juice.

We have been impressed by the fact that subperiosteal hemorrhage is frequently not diagnosed by the roentgenologist, although it may be suspected from physical examination. Unless serial roentgenograms are taken after treatment, we feel sure that the condition may be entirely overlooked. From the cases seen by us in the past two years we have selected several to



Fig. 3.—Condition in case 3, Jan. 10, 1933, after four days of treatment: increased zones of density at the ends of the diaphyses and about the epiphyseal centers; decreased zone of density in adjacent portion of diaphysis of the left femur with a lateral spur extending from this area; ground-glass appearance of the shafts but no evidence of subperiosteal hemorrhage.

illustrate the points under discussion. In none of these was there roentgenographic evidence of subperiosteal hemorrhage at the time of admission to the hospital.

CASE 1.—T. A., a boy, aged 8 months, white, admitted to the Children's Hospital, Sept. 3, 1930, because of "pain in the legs" of three weeks' duration, had been fed for several months on S. M. A. and had not received cod liver oil, orange juice or tomato juice. He was pale and irritable and cried when moved. There were hemorrhages into the gums, beading of the ribs, and tenderness over both femurs. The roentgenogram of the legs, taken the day after admission, did not demonstrate subperiosteal hemorrhage. The second roentgenogram, taken after the administration of orange juice for twenty days, showed marked calcification of the elevated periosteum at the lower end of each femur.

CASE 2.—P. K., a girl, aged 1 year, white, was admitted to the Children's Hospital, Dec. 1, 1932, with a history that for

8. Howitt, Beatrice F.: Spontaneous Scurvy in Monkeys, *Arch. Path.* 11:574 (April) 1931.

a month there had been pain when she was handled. Orange juice and tomato juice had been offered, but the child refused to take them. The diet had consisted entirely of pasteurized milk and soup. There was marked pallor and emaciation, bleeding into and from the gums, ledgelike beading of the ribs with depression of the sternum and the chondral portion of the ribs, and tenderness of the lower extremities. The diagnosis of scurvy was confirmed by the roentgenogram (fig. 1), but there was no evidence of subperiosteal hemorrhage at this time. Eleven days later, during which time orange juice had been given, marked calcification in the elevated periosteum was demonstrated on the roentgenogram (fig. 2).

CASE 3.—J. H., a girl, aged 9 months, white, admitted to the pediatric wards of the Cincinnati General Hospital, Jan. 5, 1933, had an infection of the upper respiratory tract. She had been fed on evaporated milk and had received cod liver oil but not orange juice. Her gums were swollen and had a purplish discoloration; there was beading of the ribs; the legs were held in a flexed position and there was tenderness of them on movement and pressure, but no swelling. A roentgenogram of the legs, taken five days after admission (fig. 3) (four days after



Fig. 4.—Condition in case 3, Jan. 17, 1933, after eleven days of treatment: calcification of small subperiosteal hemorrhage at the distal end of the left femur.

antiscorbutic treatment was instituted), did not show any evidence of subperiosteal hemorrhage. The picture taken eleven days after treatment was begun (fig. 4) showed a calcified periosteal elevation at the lower end of the left femur.

HEALING WITHOUT EVIDENCE OF SUBPERIOSTEAL HEMORRHAGE

Subperiosteal hemorrhage is not a necessary accompaniment of infantile scurvy. Healing may proceed without its occurrence. There may even be tenderness over the extremities without sufficient subperiosteal hemorrhage to be demonstrable on the roentgenogram. The following case is illustrative:

CASE 4.—D. W., a girl, aged 8½ months, white, admitted to the Children's Hospital, Nov. 1, 1931, had been extremely irritable for two weeks and cried out as if in pain when her legs were moved. Preceding this time there had been a period of two weeks during which she had had frequent stools. She had been fed on S. M. A. and had not received orange juice or cod liver oil, although apparently some tomato juice had been given occasionally. Ecchymotic spots were present on the gums, and there was pain on motion of the legs. A roentgenogram of the legs taken at the time of admission (fig. 5) showed

increased densities at the metaphyses and around the epiphyses, and a ground-glass appearance of the diaphyses and epiphyses. Reexamination twenty-three days later (fig. 6), during which time orange juice had been given, revealed no evidence of subperiosteal hemorrhage.

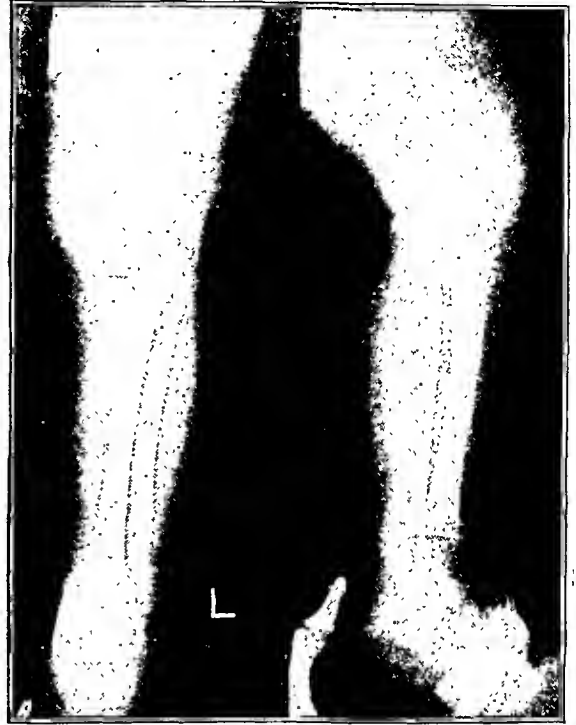


Fig. 5.—Condition in case 4, Nov. 2, 1931: increased densities at the ends of the diaphyses and around the epiphyseal centers; ground-glass appearance of the shafts.



Fig. 6.—Condition in case 4, Nov. 24, 1931, after twenty-three days of treatment: no evidence of subperiosteal hemorrhage.

COMMENT

The cases presented serve to emphasize the fact, previously noted but not sufficiently emphasized, that subperiosteal hemorrhages in infantile scurvy may not be visualized on the roentgenogram until calcium salts are

deposited in the periosteum. This deposition depends on the administration of vitamin C. When the roentgenogram demonstrates that calcium is present in the periosteum surrounding the hemorrhage, it indicates that vitamin C has been given and that healing is proceeding. Unless serial after the administration of of subperiosteal hemorrhage may be overlooked.

Elland Avenue and Bethesda.

SYSTOLIC MURMURS IN CHILDREN

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There are few differential diagnoses more difficult, and at the same time more important, than the differentiation between organic and functional murmurs. This question assumes a particular significance in childhood, when functional murmurs are common and when early rheumatic infection may give rise to faint systolic murmurs. In a given case the diagnosis of such soft blowing murmurs calls for most careful judgment, for the evaluation of the type of murmur is of extreme importance as regards the subsequent treatment of the child.

Various diagnostic criteria have been proposed to aid in distinguishing between organic and functional murmurs. Briefly stated, they are as follows:

Time in Cycle.—A functional murmur is almost invariably systolic, rarely diastolic, in time.

Quality.—Generally speaking, the functional murmur is very short and blowing. It rarely has the rough, rasping, or even musical qualities that are characteristic of organic murmurs.

Duration.—As a rule, the functional murmur is short and is heard only in the early part of systole.

Site of Maximum Intensity.—The functional murmur is usually best heard over the pulmonary area. Not infrequently, however, it is loudest over the apex and occasionally even over the aortic area.

Transmission of Murmur.—Distinct circumscribed localization is considered to be characteristic of a functional murmur. It is rarely heard beyond the precordial area.

Effect of Change of Position.—Occasionally a functional murmur may be elicited only when the patient is in the horizontal position, or a slight murmur may be accentuated by the recumbent posture.

Effect of Respiration.—A functional murmur may vary with the respiratory movements. As a rule, such a murmur is louder at the end of inspiration.

Effect of Exercise.—Exercise may accentuate, diminish or even abolish a functional murmur. Extreme variability is characteristic of functional murmurs.

Associated Pathologic Conditions.—Clinically and roentgenographically, the heart is normal in size and position. The absence of electrocardiographic changes

and of any other evidence of heart disease is an important diagnostic aid in determining whether a murmur is functional.

That these differential criteria are far from satisfactory when the physician is confronted with a specific case is a common experience. Frequently it is entirely impossible to make a positive diagnosis from a single physical examination. If during a shorter or longer period of observation systemic changes indicating organic disease, such as fever or joint pains, remain absent, the condition is more likely to be a functional one.

The differential diagnosis being frequently so difficult, it seemed worth while to obtain data by making objective records by means of the phonocardiograph. We were anxious to know whether the different types of murmurs might not show characteristic changes in the phonocardiogram. Moreover, it was realized that the record of the murmur thus graphically preserved was a permanent one and that it could be compared with records of other murmurs or with subsequent records of the same murmur.

We therefore decided to make heart sound tracings of a group of children with systolic murmurs of both the clinically organic and functional type, paying particular attention to the vibration frequency of the tracings obtained in these two types of case.

This paper is a report of our observations. While the number of cases studied was not sufficient for us to reach final conclusions, the results are unquestionably suggestive and are of sufficient interest to warrant a report.

PROCEDURE AND METHOD

The routine examination established for these cases was as follows: A complete and detailed history, with particular emphasis on the various rheumatic infections, was obtained in each case. The child was given a thorough examination. This included a search for foci of infection and evidence of rheumatic disease, and a complete study of the cardiovascular system, including a minute description of the type of murmur heard, measurement of the blood pressure, and a fluoroscopic examination of the heart for possible evidence of enlargement. In addition a complete blood count was done on each child, and the urine was examined. On the basis of these data a clinical diagnosis of either a functional or an organic murmur was made. The sound tracing was then taken. Whenever possible, the child was reexamined, both clinically and phonocardiographically.

The sound tracings were obtained by means of an electrical stethoscope.¹ The instrument consisted essentially of a three stage amplifier shielded in a metal case and regulated by a potentiometer. A series of electric filters allows the exclusion of frequencies below 130 cycles per second, and those above 300, 500 and 1,100 cycles per second. (For our purposes, frequencies above 1,100 cycles per second were excluded throughout.) A simple electromagnetic detector was fixed in position on the patient's chest with adhesive strips. In

1. The method used was first described by Prof. H. B. Williams, and the instrument was developed at the Bell Telephone Laboratories by Frederick and Dodge, in collaboration with Drs. Cabot, Gamble and Williams. A description of the method is to be found in the following articles:

Frederick, H. A., and Dodge, H. F.: The Stethophone: An Electrical Stethoscope, Bell System Tech. J. 3: 531-549 (Oct.) 1924.

Williams, H. B., and Dodge, H. F.: Analysis of Heart Sounds, Arch. Int. Med. 38: 683-693 (Dec.) 1924.

Williams, H. B.: New Method for Graphic Study of Heart Murmurs, Proc. Soc. Exper. Biol. & Med. 15: 179-181, 1920-1921.

This work was aided by the L. S. Frankenhimer Fund for Research in Pediatrics.

From the Pediatric Department and the Cardiographic Laboratory of the Mount Sinai Hospital.

order to obtain a graphic record, this apparatus was connected with one of the strings of a two-string Einthoven galvanometer, the second string being used for a simultaneous record of the electrocardiogram, lead III being generally used. In this way, correct timing of the sounds and murmurs in relation to the other events of the cardiac cycle could be obtained. The time was recorded by a tuning fork registering, by means of a phonic wheel, 0.02 second. The velocity of the moving film was so arranged that the space between two time ordinates amounted to 1 mm. This is twice the usual speed of the film in most of the galvanometers used for routine electrocardiography.

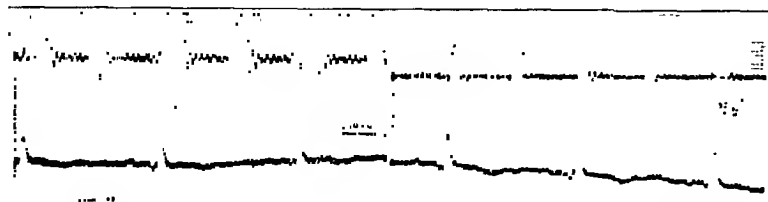


Fig. 1 (O. K.).—Normal case. No murmur is demonstrable on the curve.

Two curves were taken on each patient: 1. A tracing was made without the use of special filters (except the filter used permanently to exclude frequencies above 1,100 per second), the amplification being so arranged that the waves corresponding to the first heart sound gave deflections of from 15 to 30 mm. These curves usually showed only low frequency vibrations, the higher frequencies being demonstrable only at a much greater magnification. 2. A second tracing was therefore necessary in order to make the latter appear on the curve. Electric filters were here employed to exclude all vibration frequencies below 130 cycles per second, and the remaining higher frequencies, from 130 to 1,100 cycles per second, were recorded with much greater amplification. The expression "high" and "low" frequency vibrations, as used throughout this paper, denote respectively vibrations above or below the limiting frequency of 130 cycles per second.

SOME FEATURES OF SYSTOLIC MURMURS

Before we attempt to analyze and interpret our observations, a few remarks on the possible pathogenesis of both types of murmur may be in place. The terms "organic" and "functional" serve primarily only a practical clinical purpose. On the other hand, for the analysis of sound curves only such a classification as is founded on dynamic principles can be regarded as satisfactory. It is clear that the different systolic murmurs occurring in the various organic diseases are necessarily caused by different mechanisms. The systolic adventitious sounds heard in a pericarditis, in an aortic stenosis, in a coronary thrombosis or in a rheumatic mitral insufficiency are evidently dissimilar in origin. It seems better, therefore, to consider for the present one clear-cut type of organic murmur which is dynamically well defined, and which occurs most frequently; viz., the murmur due to changes in the mitral valves.

In the specific problem we are dealing with, the question that most frequently arises is: Has this particular child an organic mitral insufficiency due to rheumatic changes in the valves, or is the murmur due to those ill defined turbulences which may occur in any reservoir through which a liquid streams with varying velocity? To the latter group, the dynamics of which are still unknown, belong the functional systolic murmurs.

Systolic murmurs are composed of a mixture of vibration frequencies which may vary from 60 to 600 oscillations per second. As intimated, the higher vibration components are visible only in those curves that are recorded with high amplification and with filters excluding all vibrations of a frequency below 130 cycles per second. The two sets of curves taken in each case show clearly the composition of the murmurs with respect to vibration components above and below the frequency of 130 cycles per second.

The low frequency components of the murmurs, if present, are of the same approximate range as the heart sounds, from which they are rarely distinctly separable.

Usually the greater amplitude of the vibrations distinguishes the sound from the murmur, but the transition from the one to the other is, as a rule, so gradual that it is impossible to state exactly when the sound ends and the murmur begins. This is quite comprehensible when the fact is considered that there may be no essential difference in vibration frequency between the two. The acoustic impression that distinguishes sound from murmur must be due entirely to the few vibrations of great intensity and amplitude that give the sound its characteristic abruptness.

OBSERVATIONS AND CLINICAL CORRELATIONS

All systolic murmurs that we have recorded contained components of high vibration frequencies. These were present in all types of murmurs, organic and functional, with varying intensity. They occupied either the whole systole from the first to the second sound with which they merged, or only a part of the systolic period. The admixture of low vibrations, however, was quite variable. An analysis of our cases, as given

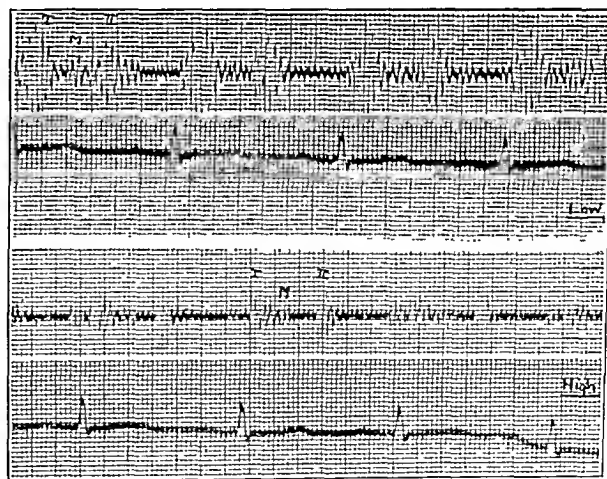


Fig. 2 (C. D.).—Clinically mitral insufficiency, beginning mitral stenosis and aortic insufficiency. After loud first sound a rough systolic murmur is heard at the apex and a fine diastolic murmur to the left of the sternum. Curves were taken from the apex. Both low and high pitched components were present. Higher pitched vibrations occupy the major part of systole. The lower components are irregularly distributed.

in the accompanying table, shows that components of low frequency were present in the majority (75 per cent) of cases with manifest organic heart disease, while they were absent in the great majority (86 per cent) of those with clinically normal hearts.

In all, sixty-four children with heart murmurs were studied. Of these, twenty-six had murmurs diagnosed

as organic by the usual and accepted clinical standards. Phonocardiographically, nineteen of these organic murmurs showed both low and high pitched vibrations. Of the remainder, six children had murmurs consisting exclusively of high pitched components. In one case the tracing was unsatisfactory.

A study of nine of the twenty-six organic systolic murmurs is particularly interesting. These nine murmurs were heard in children with chronic rheumatic cardiovalvular disease who presented a diastolic mur-

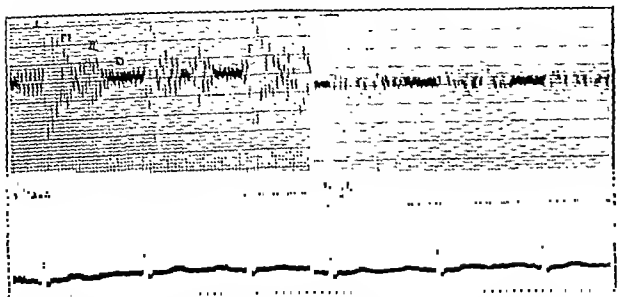


Fig. 3 (A. S.).—Systolic and diastolic murmur heard over the precordium. On the tracing, both high and low pitched vibrations occupy the entire systole. Diastolic murmur is less intense and gradually fades in diastole.

mur in addition to the systolic. There could therefore be no question of the organic nature of these nine systolic murmurs. We deem it highly significant that the sound tracings of the latter group showed consistently both low and high pitched components. We have, as

Analysis of Vibrations in Sixty-Four Cases

| Clinical Diagnosis | Total Number of Cases | High Pitched Vibrations Only | High and Low Pitched Vibrations | Tracings Indefinite |
|--------------------|-----------------------|------------------------------|---------------------------------|---------------------|
| Organic..... | 26 | 6 | 19 | 1 |
| Functional..... | 36 | 30 | 5 | 1 |
| Not diagnosed..... | 2 | .. | .. | 2 |

yet, seen no instance of an indisputable organic systolic murmur yielding a sound tracing without any low vibrations.

As has been stated, phonocardiograms obtained from six cases of supposed organic systolic murmurs showed only high frequency components and hence suggested a functional or nonorganic basis. The accuracy of the phonocardiographic interpretations, as contrasted with the clinical, is confirmed by a study of the history of one of these children:

S. L., a girl, aged 11 years, had had an occasional sore throat prior to tonsillectomy at the age of 3 years and scarlet fever complicated by an otitis media at 7 years. There were no cardiac symptoms. The patient was well developed without any evidence of rheumatic infection. There was a loud rough systolic murmur, lasting throughout systole, heard with maximum intensity in the third left interspace and transmitted upward to the vessels of the neck. Change of position from the sitting to the lying posture, as well as moderate exertion, caused an accentuation of the murmur. The blood pressure in the right arm in the recumbent position was 110 systolic and 54 diastolic. Fluoroscopic and roentgenographic examination of the heart revealed a prominence in the region of the pulmonary artery and left auricle, a suggestion of slight enlargement of the left ventricle and a prominent right auricle. The total transverse diameter of the heart was 10 cm. Urine and blood examinations were negative.

On the basis of these observations a diagnosis of congenital heart disease was made. Much to our surprise, the sound

tracing showed a high pitched systolic murmur, without low pitched vibrations, corresponding to the functional cases. Three months later, however, the child was reexamined, and no murmur was heard in any position, even after exercise.

The group of thirty-six murmurs diagnosed clinically as functional is more difficult to analyze. As indicated in the early part of this paper, one can never be absolutely certain that what is interpreted to be a functional murmur may not actually be an evidence of early organic heart disease. There is no murmur that can be designated as functional in the same unequivocal manner in which an organic systolic murmur can be diagnosed that is associated with a diastolic murmur.

In thirty of these thirty-six cases, the sound tracings were found to consist exclusively of high pitched vibrations. Of the remaining six, one showed indefinite tracings, and the other five yielded both high and low pitched components. Clinically, the latter five cases did not differ in any respect from the other thirty functional murmurs. Nevertheless, it is possible that they may have been early organic systolic blowing murmurs indistinguishable by the human ear. However, the fact that 86 per cent of the clinically functional murmurs yielded identical tracings, with high pitched vibrations only, suggests that this is a characteristic finding in functional murmurs.

In two additional cases it was impossible, either clinically or phonocardiographically, to decide on a reasonable differential diagnosis. The tracings of these cases were therefore classed as indefinite. The phonocardiograms exhibited mainly high frequency vibrations with a very slight admixture of low frequency components. Whether further tracings would have settled the question we do not know, since we had no opportunity to repeat the observations in these instances. In a few cases of similar nature in which reexamination was possible, the second phonocardiogram yielded a definite tracing susceptible of interpretation.

MECHANISM

It is clear that these differences in the curves may serve as an additional differential diagnostic criterion between functional and organic cases. The question, however, arises as to the cause of this prominent admixture of low vibrations in the organic cases. Several factors must be considered.

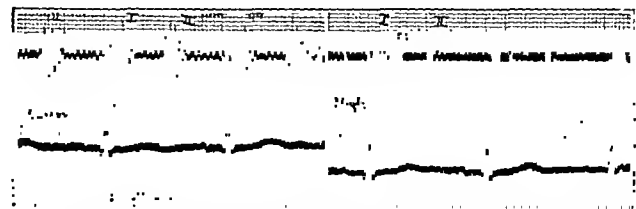


Fig. 4 (L. E.).—Functional systolic murmur heard to the left of the upper part of the sternum. Records taken from this point show only high pitched vibrations, which occupy about the first half of ventricular systole.

In the valvular organic murmurs, the murmur originates at the site of the valvular apparatus. Thus, in mitral insufficiency the high ventricular pressure forces a stream of blood back into the auricle through a more or less narrow opening caused by a shortening of the valvular leaves and their consequent inability to close tightly. The intensity of the murmur, therefore, will depend on the velocity, the pressure and the volume of the backflow, which plays on the free edge of the valve

as a bow on the strings of a violin. From this point, the vibrations are communicated to the whole system of auricle and ventricle.

Similar considerations are applicable to the case of aortic stenosis when a high pressure stream strikes against a narrowed aortic ring during ventricular systole. These organic murmurs, therefore, are usually louder than the functional type, which often appear as soft blows. This in itself is undoubtedly a factor that accounts in part for the low pitched vibrations.

We are justified in assuming that the louder the murmur the wider will be the area indirectly set into vibration and the greater the mass of tissue affected.

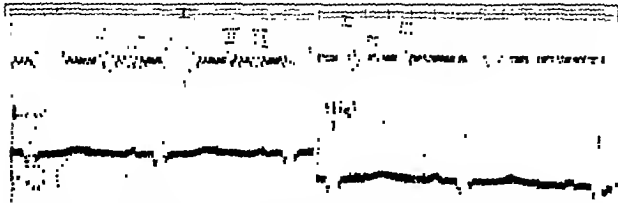


Fig. 5.—Functional systolic murmur at the pulmonic area, with reduplicated second sound. Tracings show high pitched components occupying the major portion of ventricular systole. Low vibration components are not demonstrable. The reduplicated second sound is probably the physiologic third heart sound.

Living tissues are at best not ideal conductors, and the original murmur is distorted by an admixture of widely varying vibrations. That this factor cannot, however, be solely responsible for the presence of low vibrations in organic murmurs is evident from the fact that components of low frequency are demonstrable even in rather soft organic murmurs and, on the other hand, may be lacking in those occasionally quite loud systolic murmurs at the pulmonic area which are universally regarded as functional.

Some additional factor, therefore, besides the intensity of the murmur must be assumed to account for the presence of low pitched vibrations in organic valvular cases. Our hypothesis is that, in the case of valvular lesions, the volume of blood set in direct vibration together with surrounding portions of the wall of the heart is relatively large and therefore gives ample occasion for the production of vibrations of low frequency, some of which may even lie below the acoustic range. This assumption follows easily from the previously described mechanism of the murmurs. On the other hand, it yields a hint as to the possible explanation of the nonvalvular or functional murmurs, which usually lack vibrations of low range.

We believe that the latter murmurs may be caused by purely local disturbances due to turbulences which set up vibrations of only a limited area of heart muscle, in the immediate vicinity of the whorl. If this is so, it would explain why the functional murmurs should consist mainly of high frequency vibrations.

SUMMARY

Sixty-four children with systolic murmurs, both organic and functional, were studied clinically and phonocardiographically. The records of all the murmurs contained vibrations of high frequency. Eighty-six per cent of the functional cases presented high pitched vibrations only, while organic cases revealed low as well as high pitched vibrations. This suggests an additional means of differentiating between the two types of murmurs.

1097 Park Avenue.

ULCUS ACIDUM OF MECKEL'S DIVERTICULUM

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My purpose in this communication is to describe a case of perforating ulcer of the ileum near the entrance of a Meckel's diverticulum. It is of interest because of the support it affords to the view that the principal etiologic agent in gastric and duodenal ulcer is the corrosive action of the gastric juice and because of the light it throws on the question of the mechanism of ulcer pain.

The lesion is relatively rare if one may judge from the few cases collected in the recent reviews of Aschner and Karelitz¹ and of Lindau and Wulff.² It is probable, however, that a great many other cases have occurred and have either not been recognized or not been reported in the literature. In the majority of reported cases in which an ulcer has been found in the ileum in the neighborhood of Meckel's diverticulum, a careful search has revealed the presence of heterotopic gastric mucosa of the fundus type in the diverticulum. In certain cases in which the vitelline duct has persisted as a fistula opening at the umbilicus, this heterotopic gastric mucosa has been found to secrete an acid fluid containing pepsin. The lesion has been commonly described as "peptic" ulcer of Meckel's diverticulum to emphasize the view that the chemical or digestant action of the gastric juice has been considered the major factor in its pathogenesis. I have used the term "acid" ulcer because in the light of certain recent unpublished experiments it has appeared that the free hydrochloric acid of the gastric juice is of far greater significance in the cause of ulcer than is the proteolytic ferment.

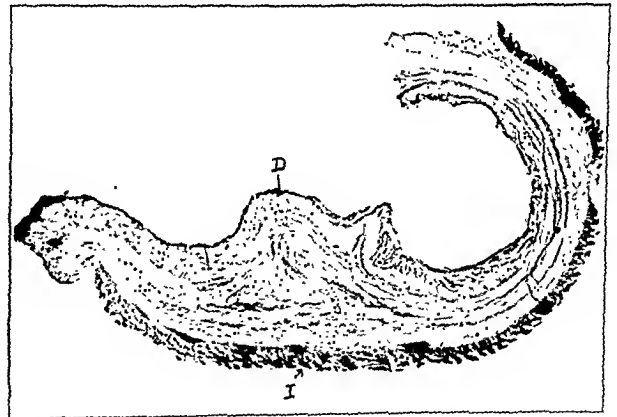


Fig. 1.—Section taken longitudinally through the diverticulum as it passed into the ileum. The lining of the diverticulum (D) is composed entirely of gastric mucosa of the fundic type. I represents the mucosa of the ileum. Reduced from a photomicrograph with a magnification of 10 diameters.

The present case is unusual because the disease developed in a youth, aged 17, whereas most of the recorded cases have occurred in infancy and have caused an early death.

Read before the Chicago Pathological Society, Oct. 10, 1932.

From the Department of Surgery of the University of Chicago.

1. Aschner, P. W., and Karelitz, Samuel: Peptic Ulcer of Meckel's Diverticulum and Ileum, *Ann. Surg.* 91: 573 (April) 1930.

2. Lindau, Arvid, and Wulff, Helge: The Peptic Genesis of Gastric and Duodenal Ulcer, Especially in the Light of Ulcers in Meckel's Diverticulum and the Postoperative Ulcers in the Jejunum, *Surg., Gynec. & Obst.* 52: 621 (Nov.) 1931.

The following report contains the significant portions of the clinical history and observations:

J. W., a white youth, aged 17, came to the Albert Merritt Billings Memorial Hospital complaining of intermittent pain in the abdomen and marked muscular weakness. The pain was first noticed three years previous to admission and had become gradually more severe, and the attacks more frequent until the present time. It was described as a knifelike sticking sensation in the region of the umbilicus somewhat to the left of the midline. The history, checked by hospital observation, brought out the significant point that the pain was most apt to occur from one half to three quarters of an hour after the noon and evening meals. It was not relieved by food taking and slightly, if at all, by alkalis.

On physical examination the most significant finding was an extreme pallor, corroborated by blood examination, which revealed a profound secondary anemia. The red blood corpuscles numbered 3,400,000 per cubic millimeter and the hemoglobin was 60 per cent. No other abnormalities in the blood were found. The spleen was definitely enlarged and easily palpable. Chemical examination revealed the continuous presence of occult blood in the stools. A thorough laboratory and roentgenologic examination of the stomach, duodenum and colon revealed no abnormalities that might account for the bleeding.



Fig. 2.—Lining of the diverticulum showing gastric mucosa of the fundus type. Reduced from a photomicrograph with a magnification of 125 diameters.

Because of the enlarged spleen and the marked secondary anemia, a provisional diagnosis of early splenic anemia was made and an exploratory laparotomy decided on. In preparation for the operation, the patient was given two blood transfusions of 500 cc. of citrated blood each. Following the second transfusion, the patient suddenly developed symptoms suggesting an internal hemorrhage and shortly thereafter passed a copious stool containing a large amount of liquid and clotted blood. This gross hemorrhage of relatively unchanged blood, together with the symptoms of pain, seemed more compatible with a diagnosis of an ulcerated lesion in the lower small intestine or in the cecum, although the cause of the enlarged spleen remained undetermined.

At operation the spleen was found to be approximately three times its normal size, soft in consistency, and smooth. An inflammatory mass was found in the ileum about 40 cm. from the cecum. A section of ileum, approximately 60 cm. in length, containing this mass was resected and the continuity of the intestine reestablished by a lateral anastomosis between the proximal and the distal ileum. The patient made an uneventful recovery and when examined three months after operation presented a normal blood picture. The spleen was no longer palpable.

The portion of ileum resected was found to contain a Meckel's diverticulum about 4 cm. in length and completely surrounded by an inflammatory mass. Near the entrance of the diverticulum in the ileum was a round perforating ulcer approximately 1.5 cm. in diameter, unquestionably the source of the bleeding.

Histologic examination revealed that the entire lining of the diverticulum resembled very closely the mucosa of the normal stomach and in particular that characteristic of the fundus (figs. 1 and 2). A section taken through the ulcer (fig. 3) showed that it had penetrated the mucosa, submucosa and muscularis and had produced a marked inflammatory reaction in

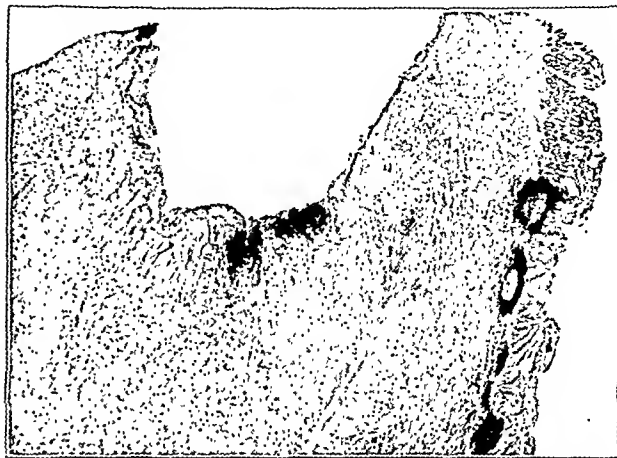


Fig. 3.—Section through the ulcer in the ileum near the entrance of Meckel's diverticulum. It has penetrated through the muscularis and has produced an inflammatory reaction in the serosa. Reduced from a photomicrograph with a magnification of 20 diameters.

the serosa. The resulting adhesions had no doubt prevented a peritonitis. The absence of round cell infiltration in the submucosa and muscularis of the ileum a short distance from the ulcer (fig. 4) is interesting in view of the observations of Konjetzny and others on the occurrence of gastritis in cases of gastric ulcer.

The relation of pain to food taking in this case may probably be explained on the assumption that the cause of the pain is the irritation of the sensory nerve fibers in the ulcer by the acid gastric juice secreted in the

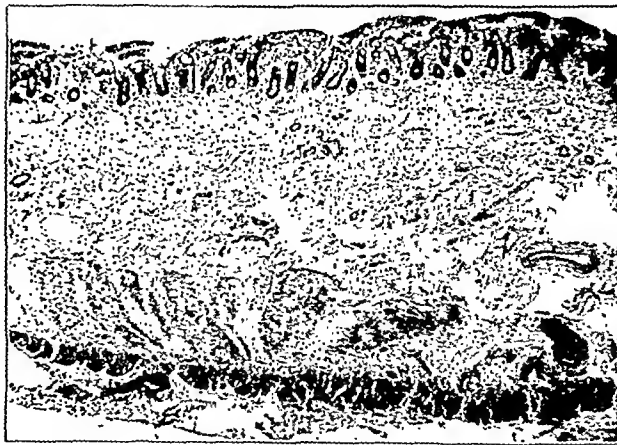


Fig. 4.—Section through the ileum about 6 cm. proximal to the ulcer. There is little or no evidence of inflammation in the submucosa or muscularis. Reduced from a photomicrograph with a magnification of 60 diameters.

diverticulum and poured out in the ileum. It was demonstrated some time ago by Ivy and Farrell³ that small pouches of the fundic portion of the stomach transplanted subcutaneously in dogs would secrete acid following a meal, presumably as a result of stimulation by some humoral agent. It is likely in this patient that in a similar way the ingestion of food was followed

3. Ivy, A. C., and Farrell, J. I.: Contributions to the Physiology of Gastric Secretion: Proof of Humoral Mechanism; New Procedure for Study of Gastric Physiology, *Am. J. Physiol.* 74: 639 (Nov.) 1925.

after an appropriate interval by the secretion of gastric juice in the diverticulum. The failure of alkalis or food to relieve the pain so induced may be reasonably explained on their inability to reach the lower ileum and so neutralize the irritant acid.

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OSTEOPETROSIS

REPORT OF CASE

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AND

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Osteopetrosis is commonly spoken of as "marble bones"; recently it was referred to as "chalky bones."¹ The condition was first described by Albers-Schönberg² in 1904, and it is usually referred to by his name. Reviews of cases may be found in articles by Karshner,³ Davis,⁴ and Alexander.⁵ Pirie,¹ in 1930, reported a total of twenty-six cases in the literature and added five. Seventeen additional cases have appeared,⁶ making a grand total of forty-eight. Few cases have lent themselves to thorough investigation; only a small number have come to autopsy and none have shown a definite etiology.

The present case report is offered because of its rarity, the relatively long observation, and its unusual features. It has been as completely studied as circumstances permitted.

History.—A white girl, born, July 6, 1915, was in good health, March 27, 1926, when a spontaneous fracture of the right femur occurred. A roentgenogram demonstrated the fracture and the presence of marble bones (fig. 1).

The parents were maternal first cousins. The past history is otherwise irrelevant. There was an older normal sister and brother. Intervening were three uninduced miscarriages and a stillbirth. This case thus represents the last of seven pregnancies.

During the latter months of gestation, the mother was ill with malaria and subsisted largely on sweet milk. Her condition reached such a state that induced labor was considered, but she went to term. The baby was entirely breast fed for the first year, and then whole cow's milk, cereals, eggs and

meats were gradually added and, occasionally, oranges. Later carbohydrates were given in excess. No cod liver oil was taken. Head rolling developed when the child was 1 year old. No illness of consequence occurred during infancy. The mother suspected blindness when the child was 6 months of age. Development and growth were normal. Slight deafness was noted only two weeks before we examined her. She was of a happy disposition and bright mentally. She never attended school but liked music and played and sang by ear. Owing to blindness she was not permitted outdoors until early childhood and had little exposure to the sun's rays.

Examination.—In May, 1926, the child showed adolescent changes, was pale, poorly nourished and poorly developed, and exhibited constant movement of the hands and head. The mouth resembled that of an elderly edentulous woman. The skin and hair were normal. The head had large temporal, parietal and vortex bossae but was not hydrocephalic. The teeth were out of line and carious. The gums were wide. The hard palate showed a deep longitudinal sulcus. The tonsils were small. The nose was normal. The eyes showed a persistent rolling and gross nystagmoid movement with alternating strabismus. The pupils were regular and reacted uncertainly to light. The fundi showed primary optic atrophy. The ears were normal. There was a chain of enlarged posterior and submaxillary glands. The sternum was prominent and the thorax had an increased anteroposterior diameter. There was no rosary. The lungs and heart were normal. The blood pressure was 130 systolic, 67 diastolic. The spleen was enlarged below the costal margin. The liver was not enlarged. There was moderate bilateral genu recurvatum. The deep reflexes and sensations were normal. The muscles were small but not atrophic. At the point of fracture there was slight pain on pressure; no callus was felt, no increased mobility and no deformity. The pulse rate was 80, the temperature 98, and respiration normal. Examination of the urine and stool gave negative results. The differential count was normal. Hemoglobin (Dare) was 70 per cent. The coagulation time was three and one-half minutes. Leukocytes numbered 6,200; erythrocytes, 3,100,000. A test for malaria gave negative results. The Wassermann reaction of the father and mother was negative. A phenolsulphonphthalein test intramuscularly showed the total dye excretion for two hours of 75 per cent. Permission was refused for withdrawal of blood. The patient left the hospital in May, 1926.

The roentgenographic observations in osteopetrosis are typical. The outstanding characteristics as described by Albers-Schönberg and others are a generalized increased radiopaqueness of all bones from the high calcium content. The general surface contour is not disturbed. This case demonstrates the classic changes as described in the literature and some additional ones (fig. 2). A description of them follows:

Roentgen Examination in 1926.—The skull was elongated and was smooth in outline. The frontoparietal sutures were ununited. The base, the posterior part of the parietal, and the upper part of the occipital bones showed proportionate increase in density. The mastoid areas were so dense that no cells were seen. The bones of the face, including the lower jaw, were small and dense. The lower jaw showed areas of density following somewhat the course of the neural canal. The teeth were poorly formed and were less dense than normal. Many were missing.

The vertebrae had asymmetrical, rounded edges. The central portion of the bodies was comparatively dense. The spinal canal was not encroached on. There was an irregular thin deposit parallel to the inferior surface of the vertebrae (fig. 3) and to a less degree along the superior surfaces. The intervertebral disks were uninvolved.

The sternum showed four distinct pieces, each with a marked increased density at the ends.

The hyoid, clavicles, scapula, ribs, sacrum, coccyx and patellas showed only the general bone disease.

The normal thin portion of the ilium remained relatively uninvolved. The junctions of the interior rami of the pubes and the ischium showed an enlargement.

1. Pirie, A. H.: *Am. J. Roentgenol.* **24**: 147-153 (Aug.) 1930.
2. Albers-Schönberg: *Röntgenbilder einer seltenen Knochenerkrankung*, München. med. Wchnschr. **51**: 365, 1904.
3. Karshner, R. G.: *Am. J. Roentgenol.* **16**: 405-419 (Nov.) 1926.
4. Davis, G. G.: *Osteoclerosis Fragilis Generalisata*, Arch. Surg. **5**: 449-463 (Nov.) 1922.
5. Alexander, W. G.: *Am. J. Roentgenol.* **10**: 280-301 (April) 1923.
6. The seventeen cases were reported by:
 - Bonta, M. B.: *Proc. Staff Meet., Mayo Clin.* **3**: 10 (Jan. 11) 1928. One case.
 - Flood, R. G.: *Calcium Metabolism in Marble Bone (Albers-Schönberg Disease)*, California & West Med. **31**: 203-204 (Sept.) 1929. One case.
 - Konjetzny, G. E.: *Isolated Marble Bone Disease in First Lumbar Vertebra*, Zentralbl. f. Chir. **56**: 2331-2334 (Sept. 14) 1929. One case.
 - Bauer, K. H.: *Localization of Marble Bone Disease in First Lumbar*, Zentralbl. f. Chir. **56**: 2327-2331 (Sept. 14) 1929. One case.
 - Ellinger, E.: *Case of Marble Disease*, Roentgen-praxis **1**: 816-824 (Nov. 15) 1929. One case.
 - Koplyow, M. B., and Runowa, M. F.: *Marble Bone Disease*, Fortschr. a. d. Geb. d. Röntgenstrahlen **40**: 1042-1054 (Dec.) 1929. One case.
 - Kudrjatzewa, N.: *Marble Bone Disease*, Arch. f. klin. Chir. **159**: 658-687, 1930. Three cases.
 - Scharisch, K.: *Marble Bone Disease*, Beitr. z. klin. Chir. **151**: 561-565, 1931. One case.
 - Camauer, A. F.: *Burlando, Adolfo, and Mortola, Gregorio: Albers-Schönberg Osteopetrosis*, Rev. Soc. de med. int. y. Soc. de tisiol. **7**: 429-446 (Aug.-Sept.) 1931. One case.
 - Zaleski: *Un cas de maladie familiale dite "des os marmoréens"*, Bull. et mém. Soc. di radiol. méd. de France **20**: 134 (March) 1932. One case.
 - Frank, E. S.: *Albers-Schönberg Marble Bones (Osteopetrosis)*, Nederl. tijdschr. v. geneesk. **75**: 5794-5804 (Nov. 28) 1931. Three cases.
 - Péhu, M.; Policard, A., and Dufourt, A.: *L'ostéopétrose ou maladie des os marmoréens*, Presse méd. **39**: 999-1003 (July 4) 1931. One case.
 - Licht, E. de Fine: *Case of Marble Bone Disease (Albers-Schönberg's disease)*, Hospitalstid. **74**: 30-33 (June 4) 1931. One case.

The femurs showed the most marked change of the long bones. The medullary canals were extremely narrow, because of a central encroachment. The right femur immediately below the great trochanter showed a complete transverse fracture with ends approximated and a small amount of callus. The medial half had apparently fused.

The tibiae showed proximal and distal clubbing. The distal ends had transverse bands of alternating density about 0.5 cm.



Fig. 1.—Fracture of right femur; osteopetrosis.

wide. The fibulas showed little alteration. The feet shared in the general change. The proximal ends of the humeri were markedly clubbed. The lower ends, except immediately contiguous to the joint surfaces, were more normal.

The radii and ulnas showed clubbing at the distal ends, with corresponding transverse bands of density (fig. 2).

The carpals showed a uniform change, which was most marked at the joint surfaces.

The metacarpals from the second to the fifth showed relatively marked density at the distal ends, less marked at the proximal ends. The first metacarpal showed the opposite relation.

All phalanges had definite bands of density proximally. The distal ends of the first and second rows exhibited a cap-like density beneath the joint surfaces extending proximally for a short distance on the lateral aspect (fig. 2).

Second Hospitalization.—The patient reentered the hospital, Aug. 29, 1932, and remained until September 3. Five weeks after the seventeenth birthday, the first menstrual period appeared. Uterine bleeding continued, confining the patient to bed with weakness, nausea, vomiting, severe headache, general abdominal soreness, and fever as high as 102 F. Little food was retained. The bowels were constipated. She was seen and hospitalized twelve days after the onset of the illness.

A second spontaneous fracture of the right femur occurred during the year 1927. Her health otherwise was good.

Physical examination showed a general critical condition, marked secondary anemia, waxy-like appearance of the skin, further dental caries, enlargement of the spleen to the iliac crest, kyphosis of the lower thoracic spine, and 2.5 cm. shortening of the right lower extremity as the outstanding changes in the physical state since the former examination. She had developed in an otherwise normal manner. She was as well as formerly at this writing, in April, 1933.

The hemoglobin was 10 per cent (Dare). Erythrocytes numbered 820,000; leukocytes, 12,300; polymorphonuclears, 58 per cent; small mononuclears, 35 per cent, transitionals, 3 per cent; large mononuclears, 2 per cent; myelocytes, 2 per cent. The bleeding time was three and one-half minutes. A test for malaria was negative. Blood Wassermann and Kahn tests were negative. The blood serum calcium was 9.8 mg.; blood serum phosphorus, 4.4 mg. A blood smear showed marked secondary anemia. Examination of the urine was essentially negative. Examination of the stool was negative. The calcium in 400 cc. of urine collected from 11 a. m. to 5 p. m. was 5.04 mg. A transfusion of 450 cc. of whole blood was given. In three days the temperature was normal and a remarkable improvement was noted in appetite and strength. A small amount of uterine bleeding was present when the patient left the hospital, against advice, on the fourth day.

Roentgen examination in 1932 showed a marked increase in the density of all the bones.

The long bones showed more clubbing, but the distribution of the clubbing remained the same. The transverse bands of density in the long bones had been lost, giving way to the characteristic generalized density, proving the progressiveness of the condition. One of the most striking changes was at the costovertebral junction, which gave the appearance of healed fractures with excess callus formation (fig. 3). The femur showed more bowing at the site of the fracture, but no excess callus. The exact site of the fracture could not be identified.

The condition marble bones presents a definite picture clinically and roentgenologically. Minor variations occur rather frequently. Observers agree on an abnormal osseous calcium metabolism but cannot satisfactorily explain it. The rôle of parathyroid secretion and vitamins has not been established.

In our own case, the mother's illness before and after delivery, her diet largely restricted to milk, and the

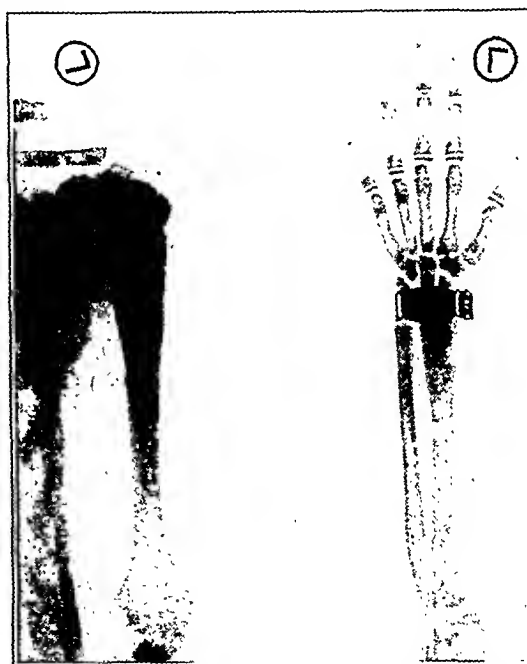


Fig. 2. (May, 1926).—Corresponding transverse bands of radius and ulnar with distal clubbing. Proximal clubbing of humerus. Changes in carpals, metacarpals and phalanges.

long exclusion from ultraviolet rays suggest an adverse influence on the development and growth of the fetus, and alteration in the vitamins and mineral content of the breast milk. This, with an infant also deprived of the sun's rays during its first year, would favor the

production of bones of less dense or rarefied characteristics, but on the contrary the bones developed considerable density. Furthermore, no convulsions, tetany, or evidence of hypocalcemia were known to exist. Considered in the light of these facts, osteopetrosis is paradoxical in that dense bones have developed under conditions that ordinarily form bones of low calcium content.

Since 1930, almost as many cases have been reported as occurred in the entire preceding period. There is probably no increase in interfamilial marriage, and certainly prenatal dieting is more scientific generally. The cause of osteopetrosis is more remote. Nothing appears in the literature to disprove a congenital origin. Search fails to reveal a single case produced experimentally, either in man or in animals, even after the removal of the parathyroids. Recently Pirie¹ studied a family group of osteopetrosis and found, by roentgen changes



Fig. 3 (September, 1932).—Bone overgrowth at costovertebral articulation.

manifested by bands of increased density near the distal ends, especially in the long bones, signs of developing osteopetrosis in a child. His observations suggest that the condition may develop postnatally, but the case had a definite hereditary influence. The bones of the parents and the elder brother in our case were entirely normal roentgenographically. We feel that the hereditary influence is a very strong factor. Intermarriage has been constantly present.

Bulger and Barr,⁷ Jaffe,⁸ Camp⁹ and others have furnished interesting data proving that parathyroid secretion is a most important factor in the decalcification of bone; but no relation to marble bones has been proved. Flood⁶ studied calcium metabolism in a single case, finding a hypercalcemia and high calcium kidney

threshold. Parathyroid extract did not appreciably alter the calcium balance. Ballin¹⁰ demonstrates excellent results in the treatment of Paget's disease of the bone and allied conditions by parathyroidectomy.

In our case, the progressive nature of osteopetrosis has been manifested by a loss of the transverse bands, generally increased bone density, further encroachment on the medullary canals, advancing alveolar destruction and dental caries, and marked secondary anemia with a tremendous increase in the size of the spleen.

The crisis accompanying the delayed first menstrual period at the age of 17 years suggests an endocrine imbalance.

The parents of this patient were maternal first cousins. The condition was found incidentally on roentgen examination for the first spontaneous fracture of the right femur at the age of 11. The second fracture occurred one year later. Both healed without incident. The mother was desperately ill the last few months of gestation. Neither she nor the infant had exposure to the sun's rays for many months. No dietary cause nor kidney insufficiency was found. Secondary anemia, dental caries, optic atrophy, enlarged spleen, and the roentgenologic observations furnish a composite picture of osteopetrosis.

Medical Building.

PNEUMOCEPHALUS AND SUBARACHNOID HEMORRHAGE FOLLOWING SKULL FRACTURE

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AND

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Pneumocephalus occurs in about 60 per cent of the cases of fracture of the skull involving the frontal sinus. The mechanism of the process whereby air reaches the cerebral ventricles or forms a cyst within the brain substance is generally accepted to be as follows: At the time of the fracture, there occurs, usually, a rupture of the adjacent meninges with secondary adhesions between the pia and the arachnoid. When, subsequently, the patient coughs, sneezes, strains or swallows, increased pressure in the sinus results, and air is forced through the fracture and the torn adjacent meninges into the brain substance, where it is trapped by the valvelike action of the meninges. As more and more air thus accumulates intracerebrally, the cyst gradually approaches the ventricle, into which, finally, the air escapes. In some cases the air is not intraventricular but remains encysted in the brain substance. Another theoretical method by which air might reach the ventricles is, of course, through the subarachnoid space, and the foramina of Luschka and Magendie.

The finding of bloody spinal fluid in such cases is not uncommon and is, of course, due to laceration of the meninges and brain.

The following case of traumatic pneumocephalus with bloody spinal fluid has come recently under our observation:

J. J., a man, aged 27, a pantryman at the Montefiore Hospital, was found lying unconscious in a street late on the

7. Bulger, H. A., and Barr, D. P.: *Ann. Int. Med.* 5:552-566 (Nov.) 1931.

8. Jaffe, H. L.; Bodansky, Aaron, and Blair, J. E.: *J. Exper. Med.* 55:695 (May) 1932.

9. Camp, J. D.: *Osseous Changes in Hyperparathyroidism*, *J. A. M. A.* 99:1913-1917 (Dec. 3) 1932.

10. Ballin, Max: *Ann. Surg.* 96:649-665 (Oct.) 1932.
From the Neurological Service of Montefiore Hospital.

evening of Dec. 31, 1931, and was brought by ambulance to Bellevue Hospital. Here, examination showed contusions of the face. Lumbar puncture yielded a clear fluid under normal pressure. He was thought to be in alcoholic coma. He remained in this condition for about twelve hours. On regaining consciousness, he left the hospital "against advice." Although he felt dazed, he traveled alone a distance of about 12 miles in the subway to his quarters at the Montefiore Hospital. On arrival, he immediately went to bed and slept for four hours. He rose to take some nourishment and returned to bed and slept for twelve hours. On arising the next morn-

ing, about thirty-two hours after the accident, he drank a glass of water, which he promptly vomited. After waiting about half an hour, he went to the dining room for his breakfast, which he also vomited after ten minutes. He felt weak and returned to bed, where he stayed till about 2 p. m., when he awoke with a severe headache. He remained in this condition till the following morning, at which time he was admitted to the ward, complaining of headache, nausea, vomiting and pain between the eyes and at the root of the nose. Here he gave a history of having been struck by a taxicab on the evening of December 31, while intoxicated. Further details were not available. His previous, family and personal past histories are not relevant.

Examination revealed contusions and abrasions over the right forehead and the left eye and at the root of the nose; the blood pressure was 130 systolic, 85 diastolic; there was a slight rigidity of the neck; the left pupil was larger than the right; the margin of the left optic nerve head appeared somewhat "fuzzy"; there was a dull tympany on percussion over the left frontal area; weakness of the right grip; depressed deep reflexes in the lower extremities, and a bilateral Mendel-Bechterew sign.

Cisternal puncture, performed with the patient in the reclining posture on the side with the head flexed, yielded no fluid, but about 5 cc. of air was withdrawn by aspiration. Spinal puncture below the fourth lumbar vertebra was then performed and revealed a uniformly bloody fluid. Another puncture in the next higher interspace yielded a similar fluid. Following the second puncture, cisternal puncture was repeated; this time a bloody fluid, though of a lighter color than that obtained on lumbar puncture, was obtained.

Stereoscopic roentgen examination of the skull showed the presence of a large amount of air in the lateral and third ventricles (figs. 1 and 2), which appeared normal in size and not displaced. A moderate amount of air was also visualized in the subarachnoid space. There was a fracture involving the

left frontal sinus a little above the level of the left orbit. On Jan. 11, 1932, a roentgen examination of the skull showed that most of the air had disappeared, and on February 1 only a very small amount was left in the subarachnoid space.

The patient's course in the hospital was uneventful. He was kept at absolute rest, in bed, and was advised against blowing his nose.

At the time of his discharge from the hospital, February 3, neurologic examination showed nothing significant. Reexamination, June 10, revealed no abnormality.

COMMENT

It is noteworthy that lumbar puncture done at Bellevue Hospital several hours after the accident showed perfectly clear spinal fluid, while puncture done several days after the accident revealed a uniformly bloody fluid. If one assumes the existence of a true cerebrospinal fluid circulation, there should certainly have been blood in the spinal subarachnoid space several hours after the accident. If, however, one accepts the theory of Sachs, that substances in the cerebrospinal fluid spread by *diffusion*, rather than by true *circulation*, this question is no longer a difficult one to answer.

We are unable to explain why the bloody fluid obtained by lumbar puncture was darker than that obtained by cisternal puncture. In neither case was there any reason to suspect that the blood was due to puncture.

The literature contains reports of about ninety-five cases of pneumocephalus, the great majority of which were traumatic, the others being due to abscesses, spontaneous rupture of a tumor into the sinuses, and

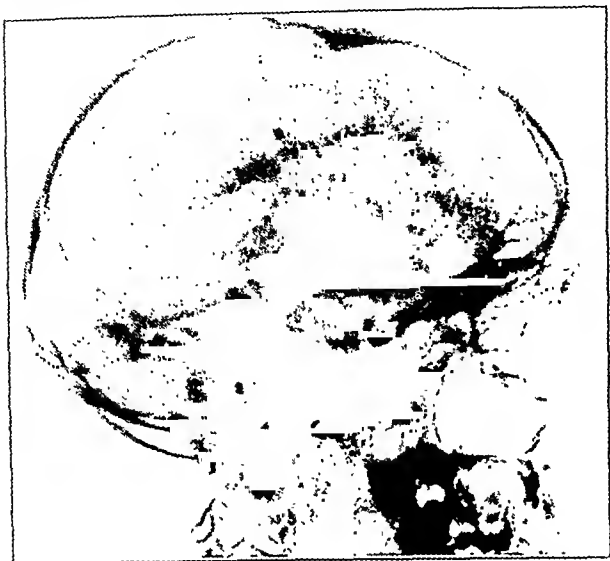


Fig. 1.—Lateral view of skull showing lateral and third ventricles uniformly filled with air.



Fig. 2.—Anteroposterior view of skull showing fracture of left frontal sinus and uniformly dilated anterior horns with no displacement.

similar causes. More than half of these ninety-five patients recovered. Of the ninety-five cases, there are adequate data regarding the cerebrospinal fluid in less than thirty. In only fourteen of these cases was bloody cerebrospinal fluid definitely found that was not due to operative procedures. Eleven of these fourteen patients recovered.

451 West End Avenue.

SYMPATHECTOMY FOR INTRACTABLE PAIN IN INOPERABLE CANCER OF THE CERVIX

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AND

H. E. SCHMITZ, M.D.

CHICAGO

The results obtained with radiation therapy in inoperable malignant growth are most unsatisfactory. In the majority of instances the doomed individual suffers from excruciating pain which necessitates the almost continuous use of narcotics. The pain is due to the extension of the growth to and about adjacent nerves. This is particularly true of malignant growths in the female genitalia, notably carcinoma of the cervix of the uterus. At present, only two satisfactory ways exist in which the constant suffering may be alleviated. Both are operative procedures. One, known as cordotomy, consists of section of the anterolateral columns of the spinal cord. The other, known as sympathectomy, consists, in cases of malignant growths of the pelvis, in removal of the so-called presacral nerve or superior hypogastric plexus.

Cordotomy will relieve pain, but it is an operation that should be carried out only by one skilled in neurologic surgery. The operation requires a laminectomy of the second, third, fourth and fifth thoracic spines and "unless the incision in the cord is accurately placed, the pain may not be completely relieved, or the motor pathways may be damaged, resulting in paralysis of the legs and interference with sphincter control."¹

Sympathectomy, on the other hand, is an operation that any gynecologist may readily perform. The risk involved is slight, the technic is not complicated, and local infiltration anesthesia may be used for a large part of and in some instances for the entire operation. Furthermore, since the abdomen must be opened to carry out this procedure, one is enabled to inspect and palpate the extent of the carcinomatous involvement.

The operation to be described is the one recommended by Cotte.² It consists of resection of the post-ganglionic fibers of the sympathetic nervous system which innervate the pelvic organs, including the uterus, bladder, anus and lower part of the ureter in women and the prostate and seminal vesicles in men. Cotte recommended the operation for a variety of conditions, chief among them being inoperable carcinoma of the uterus, dysmenorrhea, dyspareunia, vaginismus, painful cystitis, functional disturbances of the bladder, persistent leukorrhea, nymphomania, frigidity, pruritus vulvae, amenorrhea and trophic disturbances of the ovary. We believe this array of indications is far too generous because most of the conditions enumerated can be relieved without surgical intervention. We are, however, unequivocally convinced of the great usefulness of the operation in cases of unbearable pain associated with inoperable malignancy of the pelvis.

HISTORY

The first attempt to relieve pelvic pain by resecting nerves was made by Jaboulay³ in 1898, who inter-

rupted the afferent pathways in the sacral sympathetic chains. The next year, Ruggi⁴ advised resection of the utero-ovarian plexus, and in 1921 Leriche's⁵ report aroused new interest in this field of surgery. The latter recommended periarterial sympathectomy of the internal iliac arteries for the purpose of relieving dysmenorrhea and menstrual and trophic disturbances, although he performed the first periarterial sympathectomies in 1913. During the next few years, numerous publications appeared in French, Italian and Spanish

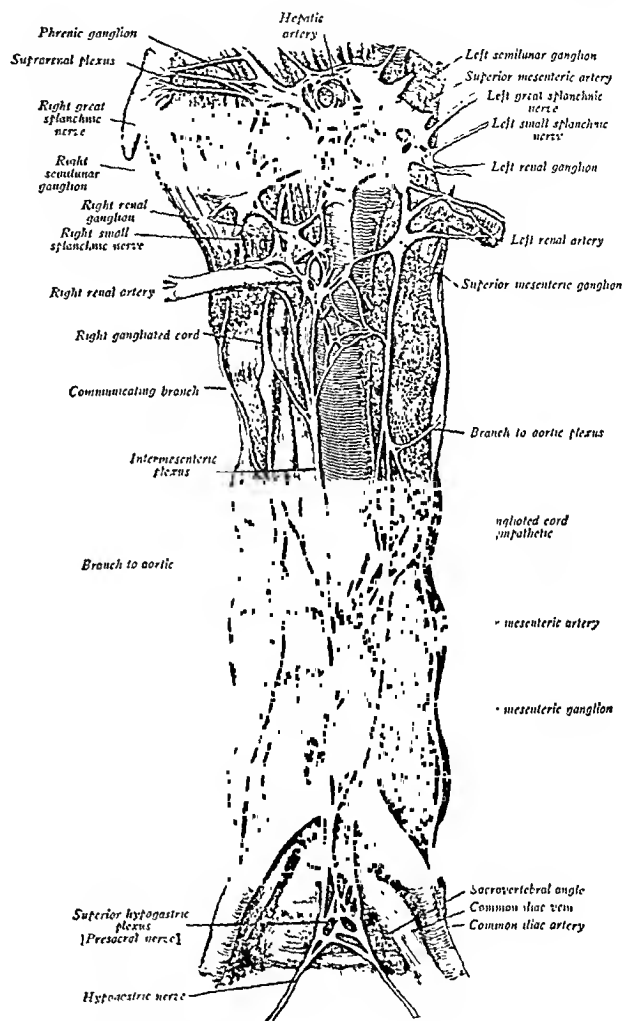


Fig. 1.—Origin of superior hypogastric plexus or presacral nerve (slightly modified from Henle).

journals. Because Leriche's operation was somewhat difficult to perform, Cotte, in 1925, recommended resection of the superior hypogastric plexus, which yielded the same results. The only American who reported doing this operation for carcinoma is Kordenat,⁶ who reported one case.

ANATOMY

Those interested in the minute details of the structures involved are referred to Cotte's two books and to the articles by Elaut⁷ and Fontaine and Herrmann.⁸ We shall here take up only the important points.

Read before the Chicago Gynecological Society, April 21, 1933.
From the Loyola University Medical School and the Cook County Hospital and Mercy Hospital.

1. Grant, F. C.: *Am. J. Obst. & Gynec.* **24**: 620 (Oct.) 1932.
2. Cotte, Gaston: *Les troubles fonctionnels de l'appareil génital de la femme*, ed. 2, Paris, Masson & Cie, 1931; *Chirurgie du sympathique pelvien en gynécologie*, Paris, Masson & Cie, 1932.
3. Jaboulay: *Lyon méd.* **90**: 102, 1899.

4. Ruggi: *Policlinico* **61**: 93, 1899.
5. Leriche, René: *Lyon chir.* **10**: 378, 1913; *Bull. Soc. de chir.* **26**: 1151, 1921.
6. Kordenat, R. A.: *Illinois M. J.* **62**: 503 (Dec.) 1932.
7. Elaut, L.: *Surg., Gynec. & Obst.* **55**: 581 (Nov.) 1932.
8. Fontaine, René, and Herrmann, L. G.: *Surg., Gynec. & Obst.* **54**: 133 (Feb.) 1932.

The portion of nerve tissue that is resected in Cotte's operation is the *nervus sympathicus pelvici*. To it many names have been given, but that suggested by Latarjet and Bonnet,⁹ namely, *presacral nerve*, is the one in common use at the present time. However, the name *superior hypogastric plexus*, suggested by Hovelacque,¹⁰ is also frequently employed. The word *plexus* is preferable to the word *nerve* because in Elaut's series of fifty anatomic dissections the tissue excised was a single nerve in only twelve cases (24 per cent). In all the other instances it consisted of an intricate network of nerve fibers. Furthermore, as Elaut pointed out, the plexus is not *presacral* but *prelumbar*. Hence, the term "*presacral nerve*" is incorrect anatomically. Nevertheless, since it has been used extensively in the literature we shall use it interchangeably with *superior hypogastric plexus*.

The *presacral nerve* arises as follows (fig. 1): Two nerves course along the lateral margins of the anterior surface of the aorta from the origin of the superior mesenteric artery down to the origin of the inferior mesenteric artery. Between these two nerves, known as the *intermesenteric plexuses* or *nerves*, are a few anastomoses that traverse the aorta. The *intermesenteric nerves* are joined by branches from the lumbar sympathetic chain. As they descend, at the level of the origin of the inferior mesenteric artery they divide into two bundles. One, known as the *inferior mesenteric plexus*, follows the inferior mesenteric artery, and the other, known as the *superior hypogastric plexus* or *presacral nerve*, continues down the anterior wall of the aorta and below it. The *superior hypogastric plexus* varies considerably in appearance, but generally it is triangular with the base caudad and the apex pointing cephalad. At the base the plexus divides into two branches, known as the *right* and *left hypogastric nerves*. These are actual nerves and course medially to but not exactly parallel with the hypogastric arteries. They extend down into the pelvic cavity, where they expand on both sides of the pelvic organs and receive branches from the sacral plexus to form the *inferior hypogastric plexuses* of Hovelacque. According to Cotte, these hypogastric plexuses were erroneously called the *cervical ganglions* of the uterus by Lee and Frankenhauser. The plexuses consist of large ganglionic plates situated on each side of and behind the cervix just above the posterior fornix and in front of the rectum. They are the plexuses that supply branches to the uterus. The ovaries obtain their chief nerve supply from the ovarian plexuses, which arise from the *intermesenteric* and *renal plexuses* and follow the ovarian arteries down into the suspensory ligaments of the ovaries. In the suspensory ligament each ovarian plexus divides into an external tubular branch, which innervates the fallopian tube, and one or more internal branches, which enter the hilus of the ovary. The nerves that supply the vagina arise in the anterior part of the hypogastric plexus, the vesicovaginal branches of this plexus and the sacral roots. The nerves that supply the rectum, the bladder and the lower portions of the ureters have their origin in the *inferior hypogastric plexuses*.

TOPOGRAPHIC ANATOMY

The *presacral nerve* can readily be found if one looks for a triangle the base of which corresponds to a line uniting the two common iliac arteries at the

level of the sacral promontory, the sides being these arteries and the apex of the triangle being the point of bifurcation of the aorta (figs. 1 and 2). This triangle occupies the lower third of the fourth lumbar vertebra, the last intervertebral cartilaginous disk and the fifth lumbar vertebra. The base of the triangle is about 7 cm. in length and the distance from the base to the apex is almost 6 cm. A large part of the left side of the triangle is occupied by the left common iliac vein, which arises from the inferior vena cava and passes downward from beneath the right common iliac artery to accompany the left common iliac artery. The triangle is divided vertically into two equal halves by the middle sacral artery, which arises from the back part of the aorta just at its bifurcation and courses straight down to the upper part of the coccyx. Since this vessel is easily felt through the peritoneum it is often mistaken for the *presacral nerve*, which runs parallel to it. From the origin of the inferior mesenteric artery down to the bifurcation of the aorta, the nerve fibers lie on the aorta, separated from it only by a layer of thin connective tissue. The branches of

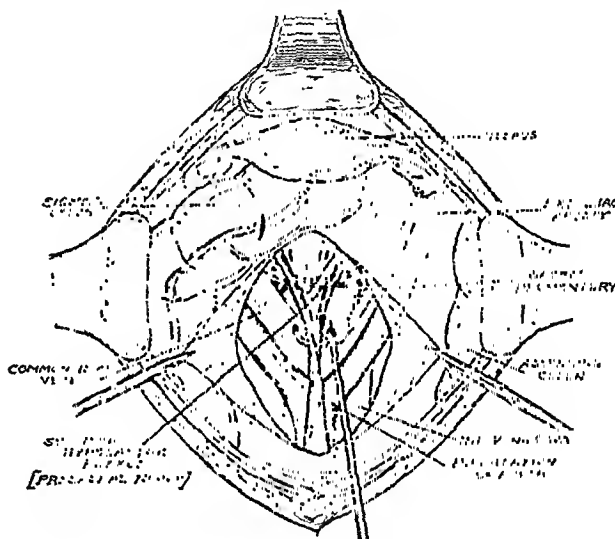


Fig. 2.—Field of operation and tissue containing *presacral nerve* and *hypogastric nerves*.

the plexus which accompany the left common iliac vein are separated from this vessel by areolar tissue, making elevation of the nerve easy. However, as the nerve fibers go still farther down, they lie on the peritoneum and perichondrium of the last lumbar vertebra, and the cartilaginous disk between this vertebra and the sacrum. At this point the plexus lies above the middle sacral artery and veins.

The entire triangle is covered with peritoneum; hence the nerve plexus lies between the peritoneum and the underlying bones. The fibers are not adherent to the peritoneum but are separated from it by more or less fatty tissue, depending on the obesity of the patient.

Usually the inferior mesenteric vessels may be seen to the left of the midline, but sometimes these vessels are in intimate contact with the *presacral nerve*. This is due to an abnormal anatomic position and undue length of the pelvic mesocolon, whereby the right root of it is inserted in the midline or still farther to the right. Hence, in these cases the incision in the posterior parietal peritoneum must be made to the right of the midline and the nerve can be reached only through

9. Latarjet, A., and Bonnet, P.: *Lyon chir.* 9: 619, 1913.

10. Hovelacque: *Anatomie des nerfs crâniens et rachidiens et du système grand sympathique*, Paris, Gaston Doin, 1927.

the thick mass at the base of the mesocolon. This is a difficult procedure.

In Elaut's fifty dissections he never found the presacral nerve in front of the sacrum. It was always above the promontory in front of the body of the fifth lumbar vertebra and the intervertebral cartilaginous disks below and above this vertebra. Hence the nerve was always prelumbar. Elaut found that the bifurcation of the nerve varies considerably. Usually it is at a point below the bifurcation of the aorta; occasionally it is at the same level as the division of the aorta, but rarely it is at the base of the triangle.

There is seldom any need to worry about the ureters except in the cases in which the pelvic mesocolon must be pulled to the left to permit exposure of the triangle. Only the right ureter must be considered, but since it

is firmly adherent to the peritoneum and the presacral nerve is not, it is easy to differentiate between the ureter and the nerve.

PHYSIOLOGY

Two questions may properly be raised. One is whether the large fibers of the sympathetic system are really sensory. Ranson says that proof of this was offered more than twenty-five years ago by Edgeworth and that he confirmed Edgeworth's observations. If the roots of the spinal nerves are cut proximal to the spinal ganglions, all the motor fibers degenerate but the sensory fibers remain.

The hypogastric plexus produces vasoconstriction of the blood vessels of the internal genital organs and it inhibits the secretion

of the genital glands, whereas the parasympathetic nerves produce the opposite effect. Section of the superior hypogastric plexus does not alter the normal menstrual cycle nor does it interfere with uterine contractions during labor. Likewise, section does not produce glandular atrophy or any disturbances in the motor function of the bladder or rectum. Therefore the nerve fibers of the superior hypogastric plexus are sensory and not motor. They carry the sensations from the internal genital organs to the medullary centers. Hence resection of the portion of the superior hypogastric plexus above the hypogastric ganglion is a simple way of relieving a patient of severe pain arising in the pelvic organs.



Fig. 3.—Excised piece of tissue measuring 10 cm. in length. Upper half of triangle contains presacral nerve and part of intermesenteric plexus. Lower half contains the two hypogastric nerves. Lateral projections just below middle are branches from fourth lumbar ganglions. Nerve fibers are clearly visible throughout entire piece of tissue.

The second question that may be raised concerns the possible harm done by removing a portion of the sympathetic nervous system. Ranson¹¹ states that Cannon and his students completely removed "the sympathetic chain on both sides, from the highest cervical to the lowest sacral ganglion. Such completely sympathectomized cats have lived under laboratory conditions for many months. . . . Everything indicates that almost any part of the sympathetic system can be removed without seriously endangering life."

INDICATIONS FOR RESECTION OF THE PRESACRAL NERVE

It is advisable to resect the superior hypogastric plexus in cases in which there is intractable pain in the lower part of the abdomen, the back and down the lower extremities associated with inoperable or recurrent carcinoma of the female reproductive organs, especially the cervix uteri. The pain in these cases is usually due to compression of the nerves in the parametrium and to inflammatory or specific involvement of these nerves. In some cases the operation will disclose a specific cause for the pain other than direct nerve involvement, such as an inflammatory mass. Resection of the presacral nerve is useless, however, if the pain is due to compression of sacral nerve roots, to pressure of involved glands on the obturator nerve or to distant metastases. Ferey¹² recommends the prophylactic resection of this nerve in all cases in which a hysterectomy is performed for carcinoma of the uterus.

TECHNIC OF OPERATION

Since many of the patients who should be subjected to this type of operation are poor surgical risks, it is best to open the abdomen under direct infiltration anesthesia. This is a very simple procedure and requires only a few minutes. The rest of the operation may readily be performed under a short ethylene or ether anesthesia or even under infiltration anesthesia. The patient should be placed in the Trendelenburg position after a midline incision has been made from the umbilicus downward toward the pubis for about 10 to 12 cm. After the peritoneal cavity is opened, the small intestine is packed off and the sigmoid and rectum are pushed to the left side and held there with a wide retractor. The uterus, adnexa and bladder may then readily be inspected and palpated to determine the extent of the malignant infiltration. One may also detect a complication, such as suppurating pus tubes, that can be remedied by a surgical procedure. The region of the lower two lumbar vertebrae and the upper part of the sacrum is exposed to view. In thin women, it is possible in some cases to see the presacral nerve immediately beneath the peritoneum. Whether or not the nerve is seen, the parietal peritoneum above and in the middle of the sacral promontory is elevated and incised with scissors. This incision is extended upward for about 4 or 5 cm. and for a similar distance down along the sacrum. When the peritoneal flaps are pulled aside, a fibrocellular connective tissue layer will be exposed, covered by more or less adipose tissue. This tissue can easily be separated from the peritoneum and the lower end of the aorta without danger. It is in this layer that the presacral nerve lies. With an aneurysm needle the tissue is elevated at the bifurcation

11. Ranson, S. W., in discussion on Sympathectomy, J. A. M. A. 56: 1978 (June 26) 1926; Surg., Gynec. & Obst. 50: 215 (Jan. 1 A) 1930.

12. Ferey, Daniel: Arch. franco-belges de chir. 30: 695 (Aug.) 1927.

of the aorta and the dissection is carried to a still higher level (fig. 2). As this is done, it will be found that in most instances the tissue spreads out triangularly. The middle sacral artery should be pushed away from the nerve, but if it is injured it can readily be ligated.

After the dissection is carried as high as it is desirable to go, the layer of nerve tissue is separated from the underlying tissue down past the sacral promontory into the pelvic cavity. In this region the plexus has divided into two hypogastric nerves; hence it is necessary to dissect one of these nerves at a time. At least 2 or 3 cm. of each hypogastric nerve should be resected in addition to 4 or more centimeters of the superior hypogastric and the intermesenteric plexuses. The fibrous tissue layer, which contains the hypogastric nerves, is much more resistant than that which contains the presacral nerve. As the dissection is carried out, nerve filaments projecting outward will be encountered. These should be followed as far laterally as possible before they are cut. In most instances, ganglions will be included in the resection. The dissected tissue should preferably be removed in one piece (fig. 3). It is not necessary or advisable to ligate the presacral nerve or the hypogastric nerves before cutting them, because the only blood vessels in intimate contact with them are insignificant vasa nervorum. In fact, Cotte is of the opinion that ligatures may be the origin of secondary pains. Very rarely does one encounter bleeding that requires more than simple temporary pressure to check it. (When the mesosigmoid is very short, care must be exercised to avoid injury to the inferior mesenteric vessels.) After the nerve is resected, the posterior parietal peritoneum is sutured with plain catgut and the abdominal wall is closed in the customary way. Since women with inoperable carcinomas are usually cachectic and prove to exhibit poor wound healing, it is advisable to use silkworm gut or other permanent suture material to aid in the closure of the abdominal wall.

RESULTS

We have thus far performed sympathectomy of the superior hypogastric plexus on thirteen patients who had inoperable carcinoma of the cervix. The pieces of tissue removed varied from 5 to 10 cm. in length. In every case, part of the excised tissue was studied microscopically and in every instance nerve fibers were found. In some cases, ganglions were seen in addition to the nerve fibers (fig. 4).

We were astonished at the brilliant results obtained, because all of the eleven patients who survived experienced instant relief following the operation. Even those who disturbed every one around them by their agonizing cries, in spite of large doses of narcotics, seldom required more than the mildest analgesic after the operation, except for the usual immediate postoperative discomfort. Three women had temporary diarrhea for a few days after the sympathectomy. Likewise, three women developed paresthesia in the back of the right thigh and popliteal space on the seventh and eighth days after operation. No bladder disturbances were observed. Two patients died, both on the twenty-fifth day after operation. One died of the cachexia she had before the procedure was carried out and the other of bronchopneumonia and cachexia. However, from the time of operation until death both patients had complete relief from the pain they suffered before operation. These two women were in extremely poor

condition at the time of the sympathectomy, and in both the entire procedure was carried out under local anesthesia. One of these women was the first one to be operated on after we worked out the technic on the cadaver. We selected those with the worst prognosis for our first cases. Not only are the eleven patients who survived free from pain but some have gained weight.

SUMMARY

At present there are only two satisfactory ways of relieving the intractable pain that is associated with inoperable malignant tumors in the pelvis; both are surgical. One, cordotomy, requires an extensive laminectomy, and unless the incision in the cord is accurately placed the pain may not be completely relieved or paralysis may result. The second operation, sympathectomy, may readily be performed by any gynecologist. The risk involved is slight, the operation is technically not difficult, local infiltration may be used for at least part of the procedure, and the operation enables one to inspect and palpate the carcinomatous involvement. The operation we advocate for the pain associated with inoperable carcinoma of the cervix consists of resection



Fig. 4.—Nerve fibers and ganglion cells at A.

of that portion of the sympathetic system known as the superior hypogastric plexus or the presacral nerve and also the two hypogastric nerves. The results obtained in thirteen cases were remarkable because all the patients experienced instant and complete relief from their suffering. We believe this operation should be performed on almost all women who suffer constant and excruciating pain as the result of inoperable cancer of the cervix.

185 North Wabash Avenue—25 East Washington Street.

Rheumatic Fever.—When the rheumatic subject is infected with the hemolytic streptococcus, the initial response is of the usual clinical character. If the infection is limited to the upper respiratory tract, recovery occurs within a few days. This illness, though mild, may nevertheless be the first phase in the development of a severe rheumatic attack. Following the subsidence of the local infection, the patient usually regains his customary health, and nothing abnormal is detected clinically. This quiescent interval of days or a few weeks represents the second phase in the evolution of the rheumatic process. The second phase persists until a rise in the titer of immune bodies is detected in the blood of the peripheral circulation.—Coburn, A. F., *Am. J. Dis. Child.* 45:933 (May) 1933.

Clinical Notes, Suggestions and New Instruments

TREATMENT OF SUBTROCHANTERIC, INTERTROCHANTERIC AND CERVICAL FRACTURES OF THE FEMUR

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In treating cases of subtrochanteric, intertrochanteric and cervical fractures of the femur, I use a device made from beef bone which I call a key, and on which I rely exclusively for

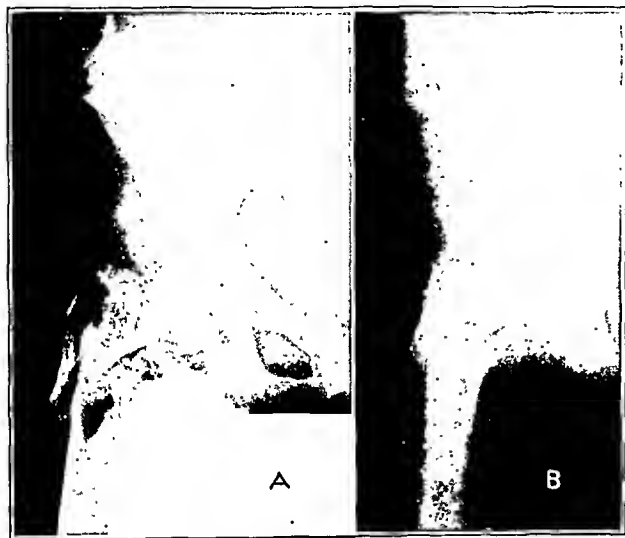


Fig. 1 (case 1).—Comminuted subtrochanteric fracture of right femur: A, before operation; B, bone key in position and crutch union in four weeks; sufficiently strong union to permit walking on crutches.

immobilization. In the subtrochanteric cases, a posterior padded board splint is used, extending from the gluteal fold beyond the heel to facilitate moving the patient and changing his position in bed.

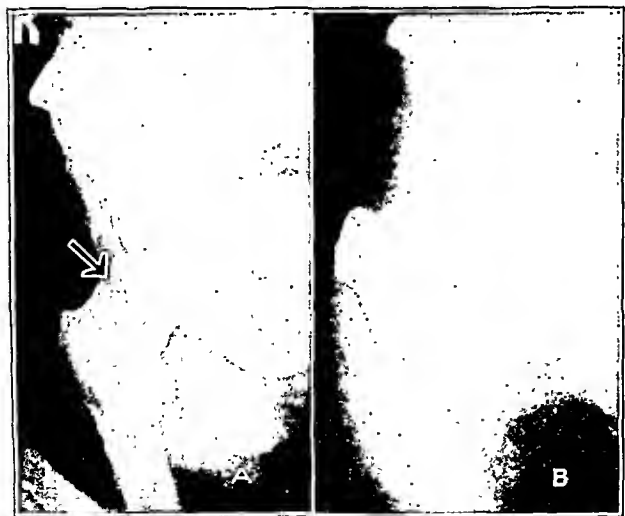


Fig. 2 (case 2).—Fracture of neck of right femur: A, before treatment; B, bone key in position four weeks after operation.

I now have a series of fifty-two cases; none of the patients have been confined to bed for more than four weeks. Union that permits walking on crutches is obtained in from three to four weeks. The following two cases are submitted, with illustrations, as examples.

CASE 1.—Mrs. R., aged 80, was blown down by the wind on the street and sustained a subtrochanteric, comminuted fracture,

as shown in figure 1 A. She was operated on the next day, the fragments were sawed smooth, and a bone key was driven in the direction of the long axis of the bone through the base of the neck of the femur at the digital fossa to engage in the medullary canal of the fragments below. Crutch union was obtained in four weeks, as shown in figure 1 B.

CASE 2.—C., a man, aged 78, with hemiplegia, fell out of his wheel chair and sustained a fracture on the paralyzed side through the neck of the femur near the head (fig. 2 A). The bone key was driven horizontally to the long axis of the leg, entering just above the base of the trochanter in passing through the neck and engaging the head. No external immobilizing method was employed. Union, as shown in figure 2 B, was obtained in four weeks. This man had been paralyzed and unable to walk, so no test of locomotion could be applied.

A more detailed description of the operation and its technic will be found in *THE JOURNAL*, Oct. 8, 1932, page 1224. This procedure offers relief not only for victims who sustain these fractures in advanced life but also for younger persons.

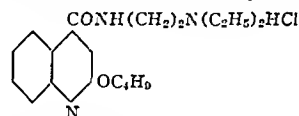
321 West Broadway.

DERMATITIS DUE TO NUPERCAINE

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Assistant Attending Dermatologist, University and Bellevue Hospital Medical College, New York

Within the past few years a new local anesthetic known as nupercaine has been introduced into this country. In Europe the same substance is known as percaine. It is recommended as producing anesthesia of prolonged duration. It is much more toxic than procaine, but, owing to the high dilutions in which it is possible to use nupercaine, the relative toxicity is about equalized.¹ Chemically, nupercaine is known as the hydrochloride of the diethylethylenediamide of butyloxycinchonic acid, and its structural formula is as follows:



It is not related to procaine, which is the monohydrochloride of para-aminobenzoyl-diethylaminoethanol. It is colorless, odorless, easily soluble in water or saline solution and is precipitated by alkali. Nupercaine is also recommended by the manufacturers for the relief of pruritus and is put up for that purpose in the form of an ointment of hydrous wool fat and petrolatum, containing a 1 per cent nupercaine base. Several fatalities and toxic manifestations with recoveries following the use of nupercaine by injection have been reported,² but I have been unable to find any previous report of dermatitis due to nupercaine ointment, though it is widely used.³

REPORT OF CASE

A middle-aged obese woman, referred to me by Dr. A. R. Chamberlain of Maplewood, N. J., had had a persistent eczema on the dorsal surfaces of the feet for several years. Her condition was otherwise negative except for a persistent achlorhydria. She had used nupercaine ointment at irregular intervals for several months to control the itching of the feet. In July, 1932, an erythematous vesicular eruption with swelling and pruritus developed on the feet, legs, thighs, arms and neck, which was thought to be due to contact with poison ivy. This eruption cleared up under soothing applications, but two or three subsequent attacks appeared in the same locations. Contact tests were carried out which gave strongly positive reactions to nupercaine. There were no reactions to hydrous wool fat or petrolatum. The nupercaine ointment was not used any more, and the skin condition improved. There was, however, another relapse, which was also traced to nupercaine. The patient had failed to discard a pair of bedroom slippers, the linings of

1. Bond, W. R., and Bloom, N.: Toxicity of Nupercaine, *J. Lab. & Clin. Med.* 18: 447-451 (Feb.) 1931.

2. Keyes, E. L., and McLellan, A. M.: Further Experiences with Nupercaine, *J. A. M. A.* 96: 2085-2091 (June 20) 1931.

3. Since this report was submitted, R. W. Fowlkes has reported a case of dermatitis due to nupercaine (*J. A. M. A.* 100: 1171 [April 15] 1933).

which had become impregnated with the nupercaine ointment. Contact tests with the lining of the slippers resulted in positive reactions. After this, recovery was uneventful.

SUMMARY

A case of dermatitis was proved to be due to nupercaine ointment, by contact tests and recovery following withdrawal of the ointment.

31 Lincoln Park.

PERIPHERAL NEURITIS AS A SEQUELA OF
SPINAL ANESTHESIA

LEWIS H. LOESER, M.D., NEWARK, N. J.

During the past year I have encountered five cases of peripheral neuritis following spinal anesthesia. The frequency of this complication in my experience would suggest that it is a more frequent complication than the literature would indicate and that the presence of an inflammatory syndrome affecting isolated peripheral nerves has not been clearly recognized by other observers.

Case reports illustrating neurologic complications of spinal anesthesia are becoming quite numerous. Of these, the most common is that of paralysis of the sixth nerve. Blatt,¹ in 1929, had collected more than a hundred such case reports and the number is considerably higher at this date.

Numerous observers have reported clinical and postmortem changes in the central nervous system following spinal anesthesia. Pathologic changes have been reported by Nonne and Demme,² Spielmeyer,³ Lindemulder,⁴ MacLachlan⁵ and others. The observations are usually those of degenerative changes in the cord, demyelination and atrophy with evidence of glial reaction, together with a varying degree of meningeal reaction.

A certain amount of experimental work has been done to study the toxic effects of spinal anesthesia on the central nervous system. Wossidlo⁶ found definite changes in the ganglion cells of the spinal cords of his experimental animals. Davis and his associates⁷ in a thorough study of the subject reported various changes including:

1. A hemolytic and myelolytic action of the various drugs on the spinal cord.
2. A varying degree of meningeal inflammation as a constant finding.
3. Changes in the ganglion cells.
4. Swelling and fragmentation of the axis cylinders with degenerative changes in the fiber tracts. It was noted that the degenerative and cellular changes were inconstant in animals allowed to live ninety days or more but that the meningeal reactions were constant and marked.

Spielmeyer³ reported essentially similar observations in his experimental animals.

It may thus be seen that changes in the central nervous system following spinal anesthesia have been clearly recognized and studied. None of the observers have, however, noted specific changes in the peripheral nerves. Although such writers as Blatt,¹ Anderson,⁸ Dassen⁹ and Klein¹⁰ have mentioned the presence of lancinating pains, anesthetics and trophic changes, they are usually ascribed to changes within the spinal cord itself.

Lindemulder states that three of his patients had pain in the legs for several months with muscle tenderness. In view of my experience, I am inclined to question his interpretation of the cause of the pain. It is quite likely that the so-called

muscle pain and the hyperalgesias were due to inflammatory reactions in the peripheral nerves rather than to other causes.

In the cases I have seen, a constant syndrome was present. The neuritis followed the spinal anesthesia within a period of from one to three weeks. In each case the first symptoms noted were pain and paresthesias radiating along the course of the nerve. One nerve was, as a rule, greatly affected; the other nerves were only slightly involved. The ulnar nerve was involved in two cases, the radial in one, and the sciatic in two others. In no case was the condition bilaterally symmetrical.

The neuritis involves both sensory and motor fibers. Unmistakable sensory changes are quickly found in the distribution of the involved nerve. Trophic changes, such as muscle wasting, were seen in two cases. Muscular weakness and paralysis were unmistakable in two cases.

The condition usually persisted for a number of months and gradually improved. The nerves remained tender to pressure and tension for several months. Therapy was of little value, although local heat did tend to relieve the pain.

Five cases in all were seen, three involving the upper extremities and two the lower. The etiology of the cases involving the nerves of the lower extremities is always doubtful, since the question may arise of mechanical damage to the nerve roots by the lumbar puncture needle. I am therefore presenting the histories of three cases in which there can be no question of etiology:

REPORT OF CASES

CASE 1.—L. H. L. (the author) was operated on for acute appendicitis, June 10, 1932, under spinal anesthesia; 0.12 Gm. of procaine hydrochloride was injected in the second lumbar interspace. The operation and anesthesia were uneventful, but the convalescence was marked by severe pain in the back between the shoulder blades, and an inconstant, remittent fever. On the tenth day, moderate pain was noted along the right leg; this subsided within a few days. On the eighteenth day, pain and paresthesia were noted along the right radial nerve. The pain gradually became more severe, and by the twenty-third day a definite neuritis of the radial nerve was noted. The nerve was excruciatingly tender along its entire course, and anesthesia was present in the usual radial distribution. Movements of the arm, which tended to stretch the nerve greatly, increased the pain. Within a few days, slight involvement of the left ulnar nerve was noted; the involvement, however, was slight and passed away a few days later.

The condition gradually improved, and the pain subsided within a few weeks, though the presence of moderate nerve tenderness was noted a number of months later.

CASE 2.—K., a man, aged 52, had the right leg amputated because of arteriosclerotic gangrene. He received 0.1 Gm. of procaine hydrochloride in the third interspace. The operation and anesthesia were uneventful. On the fifth day after operation he complained of "queer sensations and electric shocks" in the fourth and fifth fingers of the right hand. Within a few days, a definite neuritis of the right ulnar nerve was present. The nerve was tender along its entire course. Sensory changes were typical of ulnar nerve involvement. Movements of the arm acutely increased the pain. There was weakness and atrophy of the muscles supplied by the ulnar nerve. The condition persisted over three months; the pain gradually improved and power returned to the involved muscles. No specific treatment was used.

CASE 3.—K., a man, aged 70, operated on for bilateral hernia, received 0.12 Gm. of procaine hydrochloride in the third interspace. Operation and anesthesia were uneventful. The convalescence was normal until the fifteenth day, when he first noted pain in the right arm. The pain was described as "pins and needles and electric shocks" radiating along the course of the ulnar nerve. The pain grew more severe and on several occasions was sufficient to cause him to faint. On examination, three weeks after the onset, he presented sensory changes of the ulnar type and showed marked paralysis and atrophy of all the muscles of the ulnar distribution. The ulnar nerve was extremely tender to touch and pressure. His case has not been followed, and nothing is known as to his recovery.

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2. Nonne, M., and Demme, H.: Wien. klin. Wchnschr. 41: 1002-1005 (July 12) 1928.
3. Spielmeyer, W.: München. med. Wchnschr. 55: 624-634, 1908.
4. Lindemulder, F. G.: Spinal Anesthesia, J. A. M. A. 99: 210 (July 16) 1932.
5. MacLachlan, T. K.: Brit. M. J. 2: 11 (July 4) 1931.
6. Wossidlo, E.: Arch. f. klin. Chir. 86: 1017-1053, 1908.
7. Davis, Loyal; Haven, Hale; Givens, J. H., and Emmett, John: Effects of Spinal Anesthetics on the Spinal Cord and Its Membranes, J. A. M. A. 97: 1781 (Dec. 12) 1931.
8. Anderson, E. R.: Journal-Lancet 51: 403-407 (July 1) 1931.
9. Dassen, Rodolfo: Semana méd. 1: 153-155 (Jan. 16) 1930.
10. Klein, P.: Arch. f. Gynäk. 123: 300-313, 1924.

COMMENT

Two other cases were seen, one showing involvement of the sciatic nerve, the other presenting paresthesias and sensory changes of both lateral cutaneous nerves of the thigh. Their histories will not be given for the reason already stated.

The three cases cited illustrate the type of peripheral nerve involvement encountered after spinal anesthesia. Each case was thoroughly investigated for other possible etiologic agents, but no other factors were found. The cases are strikingly alike in regard to the latent period, mode of onset, distribution and duration. I am certain that if the syndrome is recognized it will ultimately be established that the presence of peripheral neuritis following spinal anesthesia is not an uncommon sequela. The pathologic condition is undoubtedly that of a low grade toxic reaction, originally within the spinal canal and extending later into the peripheral nerves. The original process is probably an arachnoiditis, the inflammatory process extending to the cord and ultimately involving the peripheral nerves, from one to three weeks after the anesthesia.

At this time, however, it is necessary to state that I do not regard this complication as a deterring factor in the use of spinal anesthesia. The advantages of spinal anesthesia under certain restrictions are so obvious that the presence of a complication such as the one described need not in any way invalidate the usefulness of the procedure.

SUMMARY

Five cases that are cited, three in detail, demonstrate the presence of peripheral neuritis following spinal anesthesia. In view of the long latent period, it is important for this complication to be recognized as a clinical syndrome and as a sequela of spinal anesthesia.

31 Lincoln Park.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.
H. A. CARTER, Secretary.

O₂-CO₂ METRIC TWIN UNIT FOR SMALL CYLINDERS ACCEPTABLE

The O₂-CO₂ Metric Twin Unit for Small Cylinders (McCormack Outfit), manufactured by the Foregger Company, Inc., 47 West Forty-Second Street, New York, is an apparatus for respiration therapy, particularly designed for resuscitation of the new-born or for use in the operating room to resuscitate an individual asphyxiated by gas.

Mechanically, it is well made, consisting of a stand and a base equipped with four rubber tired casters. The stand is provided with one control valve for oxygen and one control valve for carbon dioxide, each with two yokes to hold 2 (d) cylinders of 100 per cent oxygen and 2 (d) cylinders of 100 per cent carbon dioxide.

The meter jar combines both flow meters, oxygen with a scale maximum of 10 liters and carbon dioxide with a scale maximum of 1,500 cc. There are attachments, inhalers and rubber tubes to suit the preference of the operator. As a unit for resuscitation, it has the advantage of being absolutely independent in the establishment of a proportion of oxygen-carbon dioxide mixture. The gas mixture is easily adjustable, according to the desire of the operator.

To aid in the safety of the outfit as a resuscitation unit, an adjustable mercury gage is attached at the head of the flow meter unit, which practically eliminates the possibility of throwing an unduly high gas pressure on the lungs of the asphyxiated individual.

A unit was investigated by the Council. The report reads:

This apparatus has been used on twenty new-born infants who were in various stages of asphyxia at the time of birth. Their weight varied from 1,790 to 4,250 Gm. The menstrual age was estimated at 34 weeks in two instances; in all the

others gestation had advanced to 35 weeks in one, 36 weeks in one, 38 weeks in four, 39 weeks in four, and the remaining fetuses had reached term. The method of delivery varied; two were delivered by cesarean section, four were delivered spontaneously, and there were twelve low and two mid forceps. One of the births was the second of twins, in which solution of pituitary was given after the birth of the first fetus. This was one of the low forceps cases.

Five cases showed some sign of fetal distress prior to delivery, and in four of them meconium was visible in the amniotic fluid. Varying degrees of apnea or asphyxia were present at the time of birth. One infant was apneic, fifteen were livid, and four were pallid.

ETIOLOGY OF ASPHYXIA

The etiology of the asphyxia was obscured in five cases, although some sedative, usually morphine and scopolamine, together or alone, was given in all but two of the twenty cases.

ASPIRATION

Aspiration of mucus in varying amounts seemed to contribute to the asphyxia in seven cases and was complicated once by a tightly constricted cord about the neck and in a second case by considerable low lying cord. A cord tightly imprisoned beneath a nuchal arm occurred once uncomplicated by aspiration.

A prolonged second stage (four and one-third hours), followed by low forceps, was noted in one case. As already noted, 1 cc. of solution of pituitary before the delivery of a second twin (by forceps) caused some fetal distress in one instance.

TRAUMA

Trauma occurred in mild degree in four cases, and in one instance it was moderate. In two of these instances, the baby appeared to be narcotized also, and in a third it was premature (35 weeks).

FETAL CIRCULATION

No definite observation of the fetal circulation at birth was made in five cases. In five other cases it was described as "slow" or "fair." In two cases each the heart beats were 60, 70 and 80, respectively, before treatment and 90 in one case. In the three remaining cases the fetal circulation was described as "good."

NATURE OF RESPIRATION BEFORE TREATMENT

The nature of respirations at birth was observed as follows: none (eight); gasps—usually sporadic (five); poor (three); fair (three), and normal, but with other evidences of apnea (one).

PHARYNGEAL REFLEX

The pharyngeal reflex was observed in seventeen cases, being good in nine. It was fair in two, poor in four, and absent in two. It seemed to be a good prognostic sign as to the degree of asphyxia.

PERCENTAGE OF OXYGEN AND CARBON DIOXIDE

The following percentages of carbon dioxide and oxygen were used: 70 per cent oxygen and 30 per cent carbon dioxide, 3 cases; 90 per cent oxygen and 10 per cent carbon dioxide, 4 cases; 93 per cent oxygen and 7 per cent carbon dioxide, 7 cases; 95 per cent oxygen and 5 per cent carbon dioxide, 1 case; pure oxygen, five cases.

The pure oxygen promptly restored color and circulation after two or three breaths were inaugurated by artificial respiration. Ninety-five per cent oxygen and 5 per cent carbon dioxide seemed to act in the one case as oxygen, and 93 per cent oxygen and 7 per cent carbon dioxide were very much the same. The 70 per cent oxygen and 30 per cent carbon dioxide seemed to stimulate rapid and deeper respirations. In eleven cases the anesthesia used was ethylene and oxygen. In one case time did not permit inhalation anesthesia. The two cesarean sections were done under local (procaine infiltration) anesthesia.

The duration of labor was not recorded exactly in one case. In the other seventeen (two sections, elective) the first stage averaged about thirteen hours and the second approximately one hour and forty minutes. The total time in labor thus averaged close to fifteen hours.

TIME RELATION TO TREATMENT

Treatment was given in from one to sixteen minutes after birth, the average interval being four minutes. Fair respirations occurred before treatment in six instances, but in the other fourteen it was observed that regular satisfactory respirations were established in from one-half to eight minutes after the administration of the gas was started. The average interval was three minutes and five seconds.

RESULTS

Treatment was continued from two to fifteen minutes before the baby was thought to be in satisfactory condition to do without the gas. The average period of treatment was five minutes and thirty-one seconds. The total period of observation for each baby varied from six to fifty minutes, averaging twenty-three minutes.

Fifteen babies left the birth room in good or excellent condition; the other five left in fair condition. Two of these received repeated gas treatment (90 per cent oxygen and 10 per cent carbon dioxide) on the floor but both died.

Seventeen babies were discharged from the hospital in good condition after uneventful progress. Three babies died; all were premature, one at 34 weeks, one at 35, and one at 38 weeks' gestation by menstrual history. In two there was severe toxemia.

PROTOCOLS OF DEAD BABIES

Baby R.: The mother, an octipara, had a marked hypertension (from 200/100 to 250/140), with permanent kidney involvement. When it became apparent that she would not carry to term, a cesarean section and sterilization were done at 35 weeks. While the infant seemed to respond well clinically to the inhalations (70 per cent oxygen and 30 per cent carbon dioxide first, followed by repeated 95 per cent oxygen and 5 per cent carbon dioxide on the floor), with good color and fairly deep respiratory excursions, it died after about eight hours and showed an almost complete bilateral congenital atelectasis at necropsy.

Baby Z.: Cesarean section was done at 34 weeks because of a severe progressive toxemia, in spite of about six weeks' conservative treatment. There was fair response to gas but there were signs of cerebral hemorrhage, bulging fontanels, cyanotic spells, and bloody cerebral spinal fluid. The clinical diagnosis was prematurity and cerebral hemorrhage. No necropsy was done.

Baby K.: Spontaneous delivery occurred at 38 weeks (the baby's weight was only 1,927 Gm.). There were forty-five minutes of hard second stage pains, with poor cooperation in expulsive effort, due, probably, to scopolamine. Necropsy showed cerebral hemorrhage besides the prematurity.

The cry was poor in the three fatal cases and in one infant that survived; all of the other babies had a vigorous cry on leaving the birth room.

There were no eye changes (nystagmus, pupillary changes) paralysis or evidences of trauma noted, except for rather deep forceps marks in one instance.

The results of gas administration with this machine seem quite satisfactory, except in the case of the premature infant who died showing almost complete atelectasis after an apparently good response. Perhaps this tends to support the more recent view that the aeration of the lungs of new-born infants is a slower process, physiologically, than formerly surmised and cannot be hurried by artificial means. In one case the response to the gas was remarkably rapid and gratifying.

The claims of the manufacturers of this apparatus in emphasizing the advantage in exact regulation of percentage of carbon dioxide and oxygen seem well founded.

Percentages can readily be changed as described on the same patient, with little or no loss of time in therapy.

With reasonable care there should be no mechanical difficulty in using this machine. It appeared to be sturdy and reliable.

The Council on Physical Therapy declares the O₂-CO₂ Metric Twin Unit for Small Cylinders (McCormack Outfit) acceptable for inclusion in the list of acceptable devices.



O₂-CO₂ Metric Twin Unit for Small Cylinders (McCormack Outfit).

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
PAUL NICHOLAS LEECH, Secretary.

BURNHAM'S SOLUBLE IODINE AND BURNHAM'S IODINE OINTMENT NOT ACCEPTABLE FOR N. N. R.

Burnham's Soluble Iodine, marketed by the Burnham Soluble Iodine Co., Auburndale, Mass., was rejected by the Council in 1915 (*THE JOURNAL*, May 15, 1915, p. 1673) as a semisecret preparation marketed by means of extravagant and dangerous therapeutic claims.

In 1929, a communication was received from the consulting pathologist of the Burnham Soluble Iodine Co., which seemed to indicate that the firm was anxious to make its product eligible for admission to New and Nonofficial Remedies. The product was stated to have the following composition: "Free Iodine 3.5%, Hydrogen Iodide 1.5%, Total Iodine 5.0%, Ethyl Alcohol 42.0%." The pharmacologic action and therapeutic indications were stated to be essentially those of iodine. As a result of the Council's criticisms of the claims advanced for the product, proposed revisions of the advertising material were submitted from which the objectionable features had been essentially removed. The special claims were restricted to the statement that many physicians object to alkaline or complex iodides and that such physicians should consider Burnham's Soluble Iodine. After sufficient time had elapsed to indicate that the firm did not intend to carry the proposed revisions of the advertising into effect, a letter of inquiry was addressed to the Burnham Soluble Iodine Co. In reply, the firm wrote as follows: "Because of the conditions required for recognition of our 'physiologically available active free iodine' (Burnham's Soluble Iodine), in our last correspondence [with the Secretary] and also encouraging developments in research work in its use orally, intravenously and locally, which we hope to continue for some time, we have decided to take no further action at present with the Council towards recognition." The current advertising which is issued for Burnham's Soluble Iodine shows that the proposed revisions of the advertising have not been carried into effect but that instead the product is being marketed with claims which are as unwarranted as those which caused the Council to reject the product in 1915.

The claims which are discussed below appear in a circular entitled "Burnham's Soluble Iodine for Intravenous and Intramuscular Use." "For a number of years, discriminating practitioners have reported unusual, and even startling results, with Burnham's Soluble Iodine used either intravenously or intramuscularly, indicating that they had often proved the superiority of this treatment, especially in pneumonia and acute infections. Where there was danger of collapse and the quickest intensive effect was imperative, they found that this treatment often proved to be a life saver." The Council knows of no reliable evidence in support of such a claim. "In contrast to organic and other iodine compounds this FREE iodine, to a much larger extent, is changed into iodates in the tissues." There is no satisfactory evidence that iodates are any more effective than simple iodides in the conditions in which iodine is indicated. "Arterio-Sclerosis: Edwin Matthew, M.D., F.R.C.P. . . . 'The action of iodides, in high blood pressure depends on the iodine content, and for beneficial results there must be a certain and sufficient amount of iodine present' (and physiologically available)." It is obvious that the author of this statement did not refer to free iodine but to total iodine in the form of iodide. This is apparently an attempt to distort the original meaning to suit the purpose of the advertisement; note the parenthetical addition at the end. "An exhaustive review of the literature indicates beyond doubt that iodine intravenous (and therefore also intramuscular), has established its value in a large number of acute and chronic infections. Among these are: influenza, pneumonia, syphilis, plague, tularmia, erysipelas, typhoid, malaria, chronic joint lesions, kala-azar, and local and general infections with the pathogenic cocci." Overlooking for the moment the suggestion that intramuscular and intravenous injection are necessarily equivalent, the inference is that the

"established . . . value" is great whereas actually the opposite is the case; in some of the conditions enumerated iodine may really be dangerous. "If there is idiosyncrasy to iodine, or veins are small, dilute with equal parts sterile water to avoid possible sclerosis of the vein." The implication that a dose of iodine, if properly diluted, may be administered to an individual with idiosyncrasy to iodine, is absolutely indefensible. The total dosage in any event would be the same and the liability to severe systemic reactions would not be diminished by dilution. In "acute sepsis" it is recommended that 15 to 50 cc. be administered intravenously every one to three hours "until temperature is under control." This recommendation appears reckless.

In another circular "The Therapy of Free Iodine versus Iodides—Organic and Inorganic" the following claims are made: ". . . one would not expect the use of iodides or organic iodine compounds locally to replace the direct germicidal effect of FREE iodine. The same analogy holds for the use of free iodine for internal medication." As was pointed out in the Council's report in 1915, "the free iodine in Burnham's Soluble Iodine must act in the system as an iodide, and the whole iodine content, to furnish a correct estimate of the value of the preparation, should be reckoned as an iodide." The lapse of eighteen years since this statement was made has brought to light no conflicting testimony.

"One of the great drawbacks to the use of alkali salts of iodine, is their rapid elimination from the system." No evidence is furnished that Burnham's Soluble Iodine is any less rapidly excreted than the alkaline iodides.

Many other claims are made, some so absurd as to defy serious consideration; it would serve no useful purpose further to discuss this "literature." There is no evidence that Burnham's Soluble Iodine will do anything more than potassium iodide or, if the physician prefers, compound solution of iodine.

Recently the firm has marketed Burnham's Iodine Ointment, said to contain free iodine, salicylic acid, methyl salicylate, menthol and anesthesin (ethyl aminobenzoate-U. S. P.) in a petrolatum base, all in unstated proportions. This appears to be an unscientific preparation containing an excessive number of active ingredients, the presence of only one of which is indicated in the name. As with Burnham's Soluble Iodine, many extravagant claims are made for this ointment.

The Council finds Burnham's Soluble Iodine and Burnham's Iodine Ointment unacceptable for New and Nonofficial Remedies because they are semisecret preparations marketed with extravagant and unwarranted therapeutic claims.

BACILLUS BULGARICUS AND KEFIR FUNGI PREPARATIONS OMITTED FROM N. N. R.

For some years the Council has retained in New and Nonofficial Remedies the accepted *Bacillus bulgaricus* preparations only on condition that claims for them were limited to recommendations for the preparation of soured milk and provided especially that no claims were made for the implantation of *B. bulgaricus* in the intestine. The Council further held that milk soured by the addition of pure lactic acid has essentially the same therapeutic effect as milk soured by bacterial fermentation (Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1933, p. 246).

Lactic acid is a simple substance, easily purchased, and milk soured with it seems to have all the therapeutic properties of milk fermented by *Bacillus bulgaricus* and Kefir fungi. The Council deemed it unwise to retain in future editions of New and Nonofficial Remedies preparations of *Bacillus bulgaricus* and of Kefir fungi, since in addition to being thus superfluous, they are in general indefinite, complex and variable. The Council held that, if milk products prepared by these organisms have special qualities of palatability and digestibility and are of distinct nutritive value, they should be considered as food adjuncts rather than remedial agents and as such be referred to the Committee on Foods.

The Council voted to omit all *Bacillus bulgaricus* preparations and Kefir fungi preparations from New and Nonofficial Remedies. These include: *Bacillus Bulgaricus-Squibb*, B. B. Culture and Kefir Fungi.

Committee on Foods

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

VITAMIN D FORTIFIED PASTEURIZED MILK (150 VITAMIN D UNITS PER QUART) ADVERTISING OF W. J. KENNEDY DAIRY COMPANY

Distributor.—W. J. Kennedy Dairy Company, Detroit.

Description.—Advertising for hotted pasteurized cow's milk fortified with vitamin D (extract of cod liver oil); contains 150 vitamin D units (Steenbock—defined by the Council on Pharmacy and Chemistry of the American Medical Association, New and Nonofficial Remedies, 1933, page 428) per quart.

Preparation.—The milk complies with the analytic and bacteriologic requirements specified by the laws of the state of Michigan and the city of Detroit or other municipalities in which it is distributed.

The vitamin D concentrate added to the milk is supplied by the National Oil Products Company of Harrison, N. J., and contains a guaranteed vitamin D content per definite volume. The vitamin D concentrate is manufactured under license granted by University Patents, Inc., New York City, a subsidiary of Columbia University (patent No. 1,678,454).

Sufficient vitamin D material (to give the required number of D units per quart of milk) is admixed with a small portion of milk (one quart) by means of a small viscolizer; this thoroughly incorporates the vitamin D material into the cream of the milk. This small amount (one quart) of vitaminized milk is introduced into the whole batch, which is thoroughly agitated, pasteurized by the standard procedure of holding at 61 C. for not less than forty minutes, immediately cooled to 4 C., and automatically bottled. The bottles are closed with a seal-cap and a hood-cap held in place by wire.

Analysis (submitted by distributor).—

| | per cent |
|-------------------------|----------|
| Total solids | 12.6 |
| Water | 87.4 |
| Mineral ash | 0.7 |
| Milk fat | 3.8 |
| Protein (N × 6.38) | 3.2 |
| Lactose (by difference) | 4.9 |

Calories.—0.7 per gram; 20 per ounce.

Vitamins.—The vitamin D concentrate used in the preparation of this vitamin D milk is biologically tested. Arrangements have been made whereby the Biological Department of Michigan State College and an independent laboratory will regularly assay market samples for vitamin D. Biologic examination shows a content of 150 Steenbock D units per quart.

Claims of Manufacturer.—A rich source of vitamin D; one quart is equivalent in vitamin D content to 2½ teaspoonfuls of good grade cod liver oil (60 Steenbock vitamin D units per teaspoon).

BLAIR'S CERTIFIED SOUTHERN TYPE FLOUR (BLEACHED)

Manufacturer.—Blair Milling Company, Atchison, Kan.

Description.—A hard winter wheat "standard patent" flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (1 pound to 50 barrels of flour).

Claims of Manufacturer.—For general baking in the home.

HEINZ STRAINED VEGETABLE SOUP

WITH CEREALS AND YEAST EXTRACT

Manufacturer.—H. J. Heinz Company, Pittsburgh.

Description.—Comminuted and strained cooked mixture of carrots, celery, potatoes, tomatoes, onions, rice and pearl barley, with a small amount of autolyzed yeast concentrate, retaining in high degree the mineral and vitamin content of the natural products; no added sugar or salt; the coarser fibrous portion is removed.

Manufacture.—A mixture of rice and pearl barley, which has been sorted for removal of defective kernels, is boiled with water until soft enough to be sieved. A variety of vegetables, consisting largely of carrots, celery and potatoes with smaller proportions of tomatoes and onions are properly trimmed and washed, are placed in a closed cooker and cooked under slight pressure with exclusion of air. At the finish of the cooking a small amount of autolyzed yeast concentrate is added to enrich the flavor and the content of vitamins B and G. The cooked vegetables are mixed with the cooked cereal mixture. The extractives are retained with the solids. The entire mixture is comminuted, processed and packed as described for Heinz Strained Spinach (THE JOURNAL, Feb. 25, 1933, p. 577).

| <i>Analysis</i> (submitted by manufacturer).— | | per cent |
|---|--------|----------|
| Moisture | 88.3 | |
| Total solids | 11.7 | |
| Ash | 0.7 | |
| Sodium chloride | 0.2 | |
| Fat (ether extract) | 0.1 | |
| Protein (N \times 6.25) | 1.8 | |
| Reducing sugars as invert before inversion | 1.1 | |
| Sucrose | 0.8 | |
| Crude fiber | 0.4 | |
| Carbohydrates other than crude fiber (by difference) .. | 8.7 | |
| Calcium (Ca) | 0.03 | |
| Phosphorus (P) | 0.03 | |
| Iron (Fe) | 0.0015 | |

Calories.—0.4 per gram; 11 per ounce.

Vitamins.—The method of preparation efficiently protects the natural vitamin values. The strained mixed vegetable soup is a good source of vitamins A, B and G and a fair source of C.

Claims of Manufacturer.—For table use, but especially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving. The natural mineral and vitamin values are efficiently retained.

FORCE TOASTED WHOLE WHEAT
FLAKESWITH HARSHTEST BRAN REMOVED (FLAVORED WITH
SUGAR, SALT AND MALT SYRUP)*Manufacturer.*—Hecker-H-O Company, Inc., Buffalo, N. Y.

Description.—Cooked and toasted flaked whole wheat with only the outer bran layer removed; flavored with sucrose, salt and malt syrup.

Manufacture.—Cleaned wheat is tempered with water to facilitate removal of the outer layers of the bran, which are scoured off in a special machine; the wheat with water, brown sugar, malt extract and salt in definite proportions is cooked in closed rotating drums at 10 to 20 pounds pressure for two hours. The cooked material is partially dried with hot air, cooled with cold air, broken up into granules, allowed to stand from twelve to eighteen hours, aspirated to remove fine material, flaked between steel rolls, dried in steam heated driers, toasted in revolving gas heated drums, passed over special separators to remove fine material and off-sized flakes, cooled, and packed in wax paper bags in cartons.

| <i>Analysis</i> (submitted by manufacturer).— | | per cent |
|---|-------|----------|
| Moisture | 3.6 | |
| Ash | 3.2 | |
| Fat (ether extract) | 1.1 | |
| Protein (N \times 5.7) | 11.4 | |
| Reducing sugars as invert | 1.6 | |
| Sucrose (copper reduction method) | 2.1 | |
| Crude fiber | 1.2 | |
| Carbohydrates other than crude fiber (by difference) .. | 79.5 | |
| Iron (Fe) | 0.015 | |

Calories.—3.7 per gram; 105 per ounce.

Claims of Manufacturer.—Only the coarser outer bran layers of the wheat are removed.

LARSEN'S STRAINED TOMATOES

UNSEASONED—READY

FOR USE

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved tomatoes prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw tomatoes. No added sugar or salt.

Manufacture.—Fresh ripe tomatoes are washed, sorted, peeled, carefully inspected for removal of any undesirable material and puréed in an atmosphere of steam in a paddle type puréeing machine of monel metal with a bronze rotor. The puréed tomatoes are concentrated at 82 C. to a desired consistency in covered aluminum kettles, and automatically filled into washed cans, which are sealed and processed for twenty-five minutes at 100 C.

| <i>Analysis</i> (submitted by manufacturer).— | | per cent |
|---|------|----------|
| Moisture | 91.6 | |
| Total solids | 8.4 | |
| Ash | 0.8 | |
| Salt (NaCl) | 0.1 | |
| Fat (ether extract) | 0.3 | |
| Protein (N \times 6.25) | 1.4 | |
| Crude fiber | 0.4 | |
| Carbohydrates other than crude fiber (by difference) | 5.5 | |

Calories.—0.3 per gram; 9 per ounce.

Vitamins.—The methods of preparation, sieving and processing are efficiently protective of the natural vitamins.

Claims of Manufacturer.—For all table uses of strained tomatoes, but especially intended for infants, children and convalescents and for special "smooth" diets. Only warming is required for serving. The natural mineral and vitamin values are retained in high degree.

DIP CANDY

Manufacturer.—The Curtiss Candy Company, Chicago.

Description.—Sweet chocolate covered candy bar containing sucrose, corn syrup, coconut butter, egg albumin, cocoa, salt, gelatin, vanillin and coumarin.

Manufacture.—The ingredients in definite proportions are whipped to a spongy mass, which is spread on steel plates; the mass is solidified in refrigerated rooms, cut into bars of desired size, automatically covered with sweetened chocolate, cooled and wrapped.

| <i>Analysis</i> (submitted by manufacturer).— | | per cent |
|---|------|----------|
| Moisture | 2.5 | |
| Ash | 1.4 | |
| Fat (acid hydrolysis method) | 10.2 | |
| Protein (N \times 6.25) | 1.8 | |
| Reducing sugars dextrose | 12.1 | |
| Sucrose (copper reduction method) | 50.6 | |
| Crude fiber | 0.0 | |
| Carbohydrates (by difference) | 84.1 | |

Calories.—4.4 per gram; 125 per ounce.

FISHER'S CAKE FLOUR (BLEACHED
AND MATURED)*Manufacturer.*—The Fisher Flouring Mills Company, Seattle.

Description.—"Short patent" flour milled from a blend of soft red and white wheats; bleached and matured.

Manufacture.—Selected soft red and white wheats are cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with mixtures of chlorine and nitrosyl chloride (1½ ounces per 196 pounds), and benzoyl peroxide and calcium phosphate (1 pound per 28 barrels).

Claims of Manufacturer.—Especially adapted to cake and pastry baking.

OMAR FINE BREAD. LONG SLICED

Manufacturer.—Omar Baking Company, Omaha, Neb.; Milwaukee, Wis.; Columbus, Ohio; Indianapolis, Ind.

Description.—A white sliced bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from flour, water, powdered skim milk, lard, dextrose, beet sugar, salt, yeast, diastatic malt extract, and a yeast food containing potassium bromate, ammonium chloride, sodium chloride and calcium sulphate.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 1, 1933

THE FIRST HEART SOUND

For more than a century the heart sounds have played an important part in medical diagnosis. Their value to the clinician was stressed particularly by Laënnec, who devised the fundamental features of modern auscultation early in the nineteenth century. The association of the second sound with the closure of the semilunar valves is generally accepted. According to the familiar explanation given in a widely used textbook,¹ the usual view is that the sound is due ultimately to the vibrations set up in these valves by their sudden closure; these vibrations are transmitted to the column of blood in the aorta (or pulmonary artery) and then to the intervening tissue of the chest wall.

The so-called first sound of the heart has not yielded so readily to a satisfactory explanation. It is admittedly related in some way to the function of the auriculoventricular valves. The chief difficulty in defining the cause of the sound with precision lies in the inability to dissociate convincingly the valvular factors involving vibration of the valves from the muscular features involving vibration of associated contracting muscle masses.² A recent writer³ has briefly summarized the views as follows: The first heart sound is supposed to originate in the closure of the auriculoventricular valves, in the friction of contracting ventricular muscle, in the change in tension in the aorta and pulmonary artery, in the change in tension in the coronary vessels and, finally, according to the thesis accepted by both Schutz and Frey, in physical changes in tension of the ventricles during the rise of intraventricular pressure.

In the customary explanations of the first heart sound, there is no clarity as to how the muscle or valves set up audible vibrations. More than a hundred years ago Rouanet⁴ wrote, in a Paris thesis: "From many experiments I have learned that any membrane, passing

from flaccidity to tension suddenly, always makes a sound. . . . The auriculoventricular valves present conditions which are most favorable for the production of sound; they are thin and tough and do not stretch; they pass instantly from the most complete flaccidity to sudden and violent tension." The assumptions thus stressed have been put to test recently by Dock³ at the Stanford University Medical School in San Francisco. His experiments on the exposed hearts of laboratory animals convince him that there is no muscular element in the first heart sound and that ventricular systole produces no audible vibrations, in either empty or full hearts, if tensing of the auriculoventricular valves is prevented. Dock's thesis is that the first heart sound is due to the sudden putting under high tension of the previously slack fibers of the auriculoventricular valves. If the valves are closed and the slackness is taken up gradually before ventricular systole occurs, the intensity of the sound is greatly diminished. The factors determining loudness of the first sound are, therefore, the degree of tension in the valves when ventricular systole occurs and (less important) the rate of rise of intraventricular tension. Heretofore it has been difficult to account for the accentuated heart sound heard in some cycles in cases of complete heart block or in cases of mitral stenosis. A tenable explanation is brought nearer by the studies of Dock.

EMERGENCY RELIEF ACT AND MEDICAL SERVICE

Five hundred million dollars was made available for the relief of needy and distressed people by the Federal Emergency Relief Act, approved by the President, May 12. This supplements the unexpended balance remaining from three hundred million dollars provided for the relief of destitution and distress by the Emergency Relief and Construction Act of 1932. These huge appropriations indicate the magnitude of the problem that confronts the country. Whereas the earlier act did not indicate clearly whether the money made available could be used for the alleviation of suffering and distress due to illness and injury not directly traceable to unemployment, the act recently passed seems clearly to make adequate medical and hospital services available for the relief of needy sick and injured persons regardless of the origin of their diseases and injuries.

The provisions of the Federal Emergency Relief Act of 1933, under which the federal government is now aiding the states in their efforts to alleviate distress, replace similar provisions of the Emergency Relief and Construction Act of 1932. The money made available by the earlier act could be used only "in furnishing relief and work relief to needy and distressed people and in relieving the hardship resulting from unemployment." This ambiguous phraseology gave rise to doubt whether needy and distressed people were entitled to

1. Howell, W. H.: A Text-Book of Physiology, Philadelphia, W. B. Saunders Company, 1927.

2. Schutz, E.: Experimentelle Untersuchungen über die Entstehung der Herztöne, Ztschr. f. d. ges. exper. Med. 77: 348, 1931. Frey, W.: Die Ursachen der Entstehung der Herztöne, in Handbuch der normalen und pathologischen Physiologie, Berlin, Julius Springer 7, pt. 1, p. 292, 1926.

3. Dock, William: Mode of Production of the First Heart Sound, Arch. Int. Med. 51: 737 (May) 1933.

4. Rouanet, J., quoted by Dock.

relief when their needs and distress could not be traced directly to unemployment. The language of the Federal Emergency Relief Act of 1933, when read as a whole, does not permit such narrow construction. It authorizes grants to the several states "to aid in meeting the costs of furnishing relief and work relief and in relieving the hardship and suffering caused by unemployment in the form of money, service, materials, and/or commodities to provide the necessities of life to persons in need as a result of the present emergency, and/or to their dependents, whether resident, transient, or homeless." The nature of the emergency to be relieved is stated in section 1 of the act as "a serious emergency, due to widespread unemployment and increasing inadequacy of state and local relief funds, resulting in the existing or threatened deprivation of a considerable number of families and individuals of the necessities of life, and making it imperative that the federal government cooperate more effectively with the several states and territories and the District of Columbia in furnishing relief to their needy and distressed people." Certainly this language will neither justify nor excuse a construction of the act that denies the aid of federal funds to all ill and injured persons who are in need, without regard to the origin of their illness and injuries.

Physicians and hospital administrators have already seen numerous instances of distress due to illness and injury not traceable directly to unemployment without relief because, it was said, federal loans could not be used to aid in the maintenance of hospitals or in furnishing medical relief. Now that federal funds have been made available, physicians and hospital administrators, wherever state and local funds are inadequate to provide relief, should lead the way in asking the governors of their respective states, if they have not already sought federal aid under the Federal Emergency Relief Act of 1933, to seek such aid at once. If the state has already obtained a grant under that act, the use of it to afford relief for illness and injury may be demanded. The first effective move in any case must be made by the governor of the state, who alone is authorized by the act to make application for a federal grant.

PLACENTAL ANTIBODIES

The majority of infants under 6 months of age are apparently immune to measles, scarlet fever, diphtheria and poliomyelitis. This immunity is usually explained as the result of transmission of antibodies through the placenta, followed by postnatal transmission in colostrum and milk. In some cases, however, this simple explanation seems inadequate; infants, for example, appear immune to scarlet fever and diphtheria, whereas their mothers are demonstrably susceptible to these diseases. Again, umbilical blood from some new-born infants will neutralize poliomyelitis virus in spite of

the fact that the blood of their mothers is without demonstrable virucidal properties. To account for such paradoxes, certain immunologists have postulated the existence of a special mechanism in infants, a "tissue immunity" associated with the rapid multiplication of fetal and infantile cells. If this fetal mechanism is a reality, the placenta presumably might be the source of antibodies useful in treatment.

Applying this conception, McKhann and Chu¹ of the department of pediatrics at Harvard Medical School prepared aqueous extracts of normal human placenta and isolated sterile human globulins from these extracts. The globulins thus obtained were found to be nontoxic for guinea-pigs and rabbits. Intradermal and subcutaneous injections into members of the laboratory staff were also without toxic effects. The preparations contained no demonstrable traces of estrus-producing or ovary-stimulating hormones.

Tests of the antibody content of these placental extracts gave positive results. As little as 0.00156 cc. of a 4.2 per cent globulin solution, for example, would completely neutralize a necrotizing dose of diphtheria toxin, as shown by subsequent intradermal injection into guinea-pigs. The globulins also neutralized poliomyelitis virus *in vitro*, as shown by subsequent intracerebral inoculations of monkeys. Furthermore, the globulins would blanch scarlet fever rash, in some instances the blanching effects being superior to those obtained with specific scarlet fever antitoxin.

The most striking results, however, were in the apparently successful prophylaxis of measles. "In the course of hospitalization for other causes," they say, "fifteen children, nonimmune to measles, became thoroughly exposed to the disease, in seven cases so closely exposed that infection would seem to have been a certainty. These children received placental protein extracts by intramuscular injection within five days after the exposure to measles. Fourteen of the patients who received the placental extracts escaped measles, while one child, after a period of incubation prolonged to nineteen days, had a mild, modified form of the disease. In contrast to these children who received placental extracts, three children, similarly exposed to measles, received, on the fourth day of exposure, 30 cc. each of adult whole blood by intramuscular injection; in all, modified measles developed. Two children who through faulty histories were thought to have had measles and who received no serum contracted typical measles. The experience with these five children indicates the thoroughness of the exposure of the total group and justifies the conclusion that some, at least, of the children who received placental protein extract were protected."

The Boston investigators have carefully avoided theoretical discussion as to the probable nature of their globulin preparations, which, from their published tech-

1. McKhann, C. F., and Chu, F. T.: *J. Infect. Dis.* 52: 268 (March-April) 1933.

nic, must have been a mixture of maternal and fetal blood proteins and placental products. Certainly their results open a new approach to the prophylaxis and treatment of infectious diseases.

POTENTIAL ALKALINITY OF FRUIT JUICES

The salts of the organic acids in some of the common fruits and vegetables, as has frequently been demonstrated, are converted to bicarbonate in the course of metabolism. The alkali reserve of the body is thereby augmented to the point at which there is an apparent surplus of fixed base; as a consequence the hydrogen ion concentration of the urine is decreased, ammonia is diminished and the titratable acidity tends to fall. The exigencies of maintaining an adequate supply of base being what they are ordinarily, the foregoing facts have gradually become recognized for their therapeutic value. Although it is known that acetic, lactic, citric and malic acids are oxidized to bicarbonate to a greater or less extent under normal conditions, there is little doubt that other acids occurring in fruits and vegetables probably behave in like manner. On the other hand, experience has shown that certain distinctly "acid" fruits, such as plums, cherries, cranberries and prunes, are exceptions to the rule, since the urine acidity is increased after they are consumed in sufficient quantity. Benzoic acid was early suggested as the cause for this acidity, but it has recently been shown by Kohman and Sanborn¹ that quinic acid is largely responsible for the acidifying effect of prunes and cranberries.

In view of the increasing use of orange and tomato juice in the diet, significance attaches to the study of Saywell and Lane² on the comparative effects of these food materials in metabolism. When 1,000 Gm. either of tomato juice or of orange juice was added to a basal ration of human subjects over a period of five days there was in both cases a progressive decrease in acidity of the urine as shown by the hydrogen ion concentration and the titratable acidity and a decrease in the ammonia. This tendency toward alkalization was more pronounced with tomato juice than with orange juice. A study of the ash of the fruits indicated that in tomatoes there is more water soluble alkalinity than in oranges. Determinations of the extent of oxidation of the organic acids in the two fruit juices indicated that this change took place to the extent of over 90 per cent, with the orange juice somewhat superior in this respect.

These studies serve to extend similar observations on pineapples, figs and other fruits and vegetables. Given certain kinds of readily available organic acid salts, the body converts the base to the physiologic alkali bicarbonate. It has been stated³ that it is practically impos-

sible to overstep the capacity of the organism to bring about this type of oxidation. In this connection may be emphasized, too, the pleasant and surprisingly efficient quality of certain of nature's dietotherapeutic measures, for along with the indispensable base in fruits and vegetables there are provided pigments and vitamins and doubtless other as yet unappreciated essentials of nutrition.

Current Comment

LETTUCE AND THE REQUIREMENT FOR CALCIUM

The attention that has been devoted to the biochemical importance of calcium in recent years is justified both by the functional significance of calcium in the organism and by a consideration of the available supply under ordinary circumstances. This element enters into the structure of the body, about 99 per cent of the content of calcium being present in the skeleton. Furthermore, such fundamental reactions as the clotting of blood and the orderly operation of the muscle-nerve mechanism are dependent on the presence of calcium in normal concentration. However, it has been pointed out¹ that the ordinary American dietary is more likely to be deficient in calcium than in any other nutritive essential. It has thus happened that special attention is usually given to the calcium content of the food materials making up the diet. Milk contains somewhat more than one gram of this element per liter, and both milk and milk products have long been recognized as exceptionally valuable sources of lime in the diet. For practical reasons it is often impossible to satisfy the total daily requirement for calcium with milk. Thus it is important to evaluate other components of the diet in this connection and to determine the availability of the calcium determined in them. In a recent study on human subjects, Mallon, Johnson and Darby² have compared the retention of the calcium of leaf lettuce with that of milk, when the greater part of the lime was provided by either of the two food materials and the remainder of the diet was adequate. The data indicate that the retention of calcium was markedly greater when provided by lettuce than when the same amount was consumed as milk. These observations might serve as a challenge to the superiority of milk as a source of lime until it is realized that the daily consumption of about a peck of lettuce was required to equal the calcium of the amount of milk ingested—a little more than half a pint. Similar difficulties of a strictly practical nature militate against entire dependence on sources of calcium other than milk. However, these studies, along with those of similar nature carried out on other leafy and root vegetables, emphasize the fact that, when necessary, other food materials can at least supplement, if not entirely satisfy, the daily requirement for calcium.

1. Kohman, E. F., and Sanborn, N. H.: *J. Indust. & Engin. Chem.* 23: 126, 1931.

2. Saywell, L. G., and Lane, E. W.: *J. Nutrition* 6: 263, 1933.

3. Blatherwick, N. R., and Long, M. Louisa: *J. Biol. Chem.* 53: 103 (July) 1922.

1. Sherman, H. C.: *J. Biol. Chem.* 44: 21 (Oct.) 1920.

2. Mallon, M. G.; Johnson, L. M., and Darby, C. R.: *J. Nutrition* 6: 303 (May) 1933.

PROCEEDINGS OF THE MILWAUKEE SESSION

MINUTES OF THE EIGHTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT MILWAUKEE, JUNE 12-16, 1933

(Continued from page 2023, volume 100)

NEW BUSINESS

Report of Committee on Mental Health

The Secretary presented the printed report of the Committee on Mental Health, which was referred to the Reference Committee on Medical Education.

Petition for Section on Stomatology

Dr. Grant C. Madill, New York, read the following petition from the American Society of Stomatologists, which was referred to the Council on Scientific Assembly:

To the Members of the House of Delegates:

As director of the American Society of Stomatologists and for the profession of stomatology as represented by the subjoined signers of this petition, I hereby ask for recognition of our standing as practitioners of a specialty in medicine.

At no other time in the history of American medicine and dentistry has the lack of recognition by the American Medical Association of stomatology as a specialty presented so significant a problem of vital concern to the dental surgeon, to the public, and possibly to the general physician, the surgeon and the worker in the accredited medical specialties.

Without recognition, the oral clinician is deprived of the opportunities which he would otherwise have of improving the quality of his services to his patients in particular and to the community in general. With official recognition, the dental surgeon would not only be himself benefited but would also be in a position in a greater measure to aid in the scientific development of the great healing art, medicine, of which dentistry is a part. The benefits would thus accrue to the medical and dental professions and to the public.

The scientific and practical importance of the close association of the work of the dentist, and especially the operating dentist, with general medicine has long been urged. This fact has been repeatedly stressed by Prof. Oliver T. Osborne of Yale, as may be noted by one of his statements as follows:

"We must recognize, and immediately, that the responsibility of the dentist does not end with the jaws. Also the physician must recognize the relation of the mouth to the general health of the individual and that he must seek consultation with the dental specialist. It is hardly necessary to urge the importance of, or to repeat the proved facts that mouth infection is responsible for a large amount of disease to which civilized races are subject."—*Review of Clinical Stomatology*, June, 1925.

Also, Dr. Lewellys F. Barker of Johns Hopkins University, discussing "The Function of the Dentist," states as follows:

"If medicine has to deal with all varieties of departures of the human organism from health, and if dentistry has to deal with the particular departures of the teeth and the tissues about the teeth from conditions of health, it is obvious that dentistry must be looked upon as a special department of medicine, which became more or less divorced from general medicine mainly on account of the extensive practical-technical manipulations that must be learned for successful practice of dentistry and partly because of the fact that one who specializes in dentistry can have out little time for the practice of general medicine or another medical specialty.

"As a result of the teaching of medicine and of dentistry in separate schools and of the separation of this particular specialty in practice from the other medical specialties and from general medicine and surgery, there was for a long time failure of cooperation between the medical profession as a whole and the dental profession."—March 31, 1930.

Dr. Harlow Brooks of New York University, in an address on "Cooperation Between Physician and Dentist," stated as follows:

"There are very few branches of medicine in which dental problems may not arise, and in which discreet dental judgment is not of value. Signal illustrations of our mutual dependence and of the greater benefit we may give to our clientele by the mutual consideration of clinical prob-

lems are seen notably in reconstructive surgery, particularly of the head, orthopedics, pediatrics, gastro-enterology, and metabolic disorders of all sorts. Even in a field apparently so foreign to dental interests as obstetrics, dental problems appear."

"Irrespective of what you and I may think or wish, I believe it inevitable that in the future dentistry must be considered as a very definite specialty of medicine. There are very many of us who consider that this has already been accomplished in fact, if not in theory."

—*Journal of Dental Research*, December, 1931.

Your petitioners urge that the House of Delegates recommend the formation of a new section under the title of "Section on Stomatology"; or if that does not seem advisable, they would suggest that in a section now established, a subsection be formed entitled "Stomatology."

Application for membership in this section of the American Medical Association should be open to duly graduated licensed dentists holding membership in the American Dental Association.

The activities of the proposed section should be limited to such papers and demonstrations as will permit the growth and scientific value of the medical and surgical aspects of Stomatology. In other words, the problems to be discussed might be outlined as follows:

- (a) Clinical stomatology.
- (b) Stomatologic diagnosis.
- (c) Methods of cooperation between dentist and physician.
- (d) Problems in the fundamental stomatologic sciences such as anatomy, pathology, bacteriology and hygiene.
- (e) Medical and surgical therapy.
- (f) To arrange for the publication of the Transactions of the Section and aid in other ways to enrich stomatologic literature.
- (g) To offer assistance and participate in all such other activities of a scientific and professional nature as it may be called upon to do by the officers of the Association.

Respectfully submitted.

ALFRED J. ASGIS.

The petition was signed by fifty-nine members of the American Medical Association and by twenty-three stomatologists from various parts of the country.

Resolutions Dealing with Listing of Specialists in American Medical Directory

Dr. Samuel J. Kopetzky, New York, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The Council on Medical Education and Hospitals for something more than a quarter of a century has been engaged in formulating standards for the training of physicians, and through its policy of investigation and publication has succeeded in elevating the general standard of medical education throughout the country, and

WHEREAS, In recent years the Council has, under the direction of the House of Delegates, in consultation with the leaders in these respective fields, established certain standards for the recognition of qualified physicians specializing in pathology and radiology, and

WHEREAS, There is evidence of a widespread interest in the problems of medical specialism and a very general demand that means be found and standards formulated by which specialists may be known and recognized by their fellows in the profession, and that in this process of standardization there should be a national and uniform standard rather than a multiplicity of standards represented by the various state boards and state societies, and

WHEREAS, A number of special examining boards have already been created to test the fitness and certify the qualifications of men engaged in, or desiring to engage in, special fields of practice, and such certificates have come to be regarded as establishing the skill and proficiency of those to whom they have been issued, and

WHEREAS, The Council may contribute to the usefulness of these special examining boards by granting some form of recognition to those

which now, or hereafter, maintain satisfactory standards of organization and procedure; therefore be it

Resolved, That the Council on Medical Education and Hospitals is hereby authorized to cooperate with the existing examining boards (official) and the Association of American Medical Colleges, the Federation of State Licensing Boards, the National Board of Medical Examiners, through an advisory council hereafter to be set up; and be it further

Resolved, That the trustees and the Council on Medical Education and Hospitals be authorized to deal with the question of listing of specialists in future editions of the American Medical Directory as mutually agreed upon in the advisory council thus set up.

Resolution on Training School in Occupational Therapy

Dr. J. Gurney Taylor, Wisconsin, at the request of the American Occupational Therapy Association, presented the following resolution, which was referred to the Board of Trustees:

WHEREAS, There is a recognized demand for qualified professionally trained occupational therapists in the hospitals of this country, and

WHEREAS, The work of these therapists is under the direction of members of the medical profession, and

WHEREAS, The medical profession and the American Occupational Therapy Association recognize the vital importance of establishing minimum standards of training and the inspection of training schools in occupational therapy by a qualified and authoritative organization; therefore be it

Resolved, That the entire subject be left to the Board of Trustees of the American Medical Association, with the request that it be given careful study and consideration and, if practical and feasible, some plan for the establishment of standards, ratings and inspections of training schools in occupational therapy be effected, providing that the expense of such inspection be borne by the school requesting the same.

Resolution on Radio Broadcasting

Dr. Carl F. Moll, Michigan, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, Radio broadcasting is under the control of the Federal Radio Commission, and

WHEREAS, There are no apparent restrictions of the advertising statements and claims that are being broadcast, and

WHEREAS, The radio is being employed to broadcast unsupportable claims and statements related to a large number of alleged preparations for the cure of many ailments and diseases, thereby misleading the public; therefore, be it

Resolved, That the Board of Trustees through the Bureau of Investigation, and through such other national organizations as the Board may be able to enlist, initiate and pursue activities and efforts to terminate misleading and misrepresenting radio broadcasting that is related to medicinal remedies and preparations for the conservation and protection of the health interests of the public.

Resolutions on Early Election of Delegates

Dr. William H. Myers, Georgia, presented the following resolutions, which were referred to the Reference Committee on Rules and Order of Business:

WHEREAS, The annual sessions of a number of the constituent associations occur so near the time of the annual sessions of the American Medical Association that it is now impossible for them to send in a complete list of the names of their delegates in time for these to appear in the Handbook; be it

Resolved, That the House of Delegates of the American Medical Association respectfully suggests that all constituent associations elect their delegates far enough in advance so that the names of all delegates may be properly listed in the Handbook.

The suggestion is made that the terms of delegates might run from January 1 to December 31 of the years for which they are elected. Be it

Resolved, That a copy of this resolution be sent to the secretaries of all constituent associations.

Resolutions to Broaden Scope of Activities of Council on Medical Education and Hospitals

Dr. Louis J. Hirschman, Michigan, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The trend of public events is bringing about readjustments along all avenues of trade, industries, education and social life, and

WHEREAS, Medical education and the practice of medicine is involved in these readjustments, and

WHEREAS, There is a pressing need that factual data be readily available for the information and molding of public opinion and for the guidance of all who seek to establish public policies and public movements, and

WHEREAS, The American Medical Association should exercise a wholesome influence and exhibit an aggressive position in all of these movements to enhance public welfare, and

WHEREAS, Our Council on Medical Education and Hospitals should assume a guiding leadership as it has ever been intended that it should,

and not content itself with routine contact with existent institutions and has not advanced or initiated progressive movements along the avenues of medical education, hospital administration and the public's relation thereto; therefore be it

Resolved, That the Board of Trustees be directed to cause the Council on Medical Education and Hospitals to become aggressively active in:

(a) Evaluating and comparing the merits of the curriculums of approved medical colleges and those alleged colleges operated by the cults.

(b) A study of medical matriculates and graduates for the purpose of determining annual quotas of admission of students.

(c) Devising a course of lectures and demonstrations related to medical ethics, economics, office and practice business details, relationship of physician to patient and public and the fundamental purposes and activities of county, state and national organizations and causing their inclusions in curriculums of approved colleges.

(d) Advisability of accepting a year of association with an approved general practitioner of medicine in lieu of the intern hospital year for all graduates desiring to enter general practice.

(e) A study and devising of a plan that will abolish the so-called state board examinations (often farcical and not at all competent to determine a candidate's qualifications), and in lieu of such examination accept the certification of an approved medical college as to the candidate's training and graduation.

(f) Devising a plan and procedure for the certification of specialists in all branches of medicine and surgery; and be it

Resolved, That the Council on Medical Education and Hospitals impart through effective channels its studies, conclusions and recommendations for the information, advice and guidance of the public and the profession in order that our social readjustments may be influenced by such authentic and dependable information and recommendations.

Resolution on Establishment of a Bureau of Information in Washington, D. C.

Dr. Charles E. Riggs, U. S. Navy, presented the following resolution, which was referred to the Board of Trustees:

WHEREAS, Matters of importance to the welfare of the practitioners of medicine throughout the United States are constantly under consideration and being decided by Congress and other governmental bodies at Washington, D. C., and

WHEREAS, The administrative heads of the four large federal medical groups, viz. those of the Army, Navy, Public Health and Veterans' Administration and, also, the heads of the scientific bureaus of the government are located at Washington, D. C., and

WHEREAS, It is considered desirable that the American Medical Association represent organized medicine in any activities of these legislative, departmental, scientific and other groups in matters affecting the welfare of the practitioners of medicine throughout the country;

Resolved, That the American Medical Association establish and maintain at Washington, D. C., a permanent, properly equipped office with qualified personnel to represent the interests of organized medicine before the committees of Congress, departmental bureaus, scientific societies and other bodies in matters which affect the interests and standing of organized medicine, this department to be under the direction of the Bureau of Legal Medicine and Legislation and to be called, "The Bureau of Information of the American Medical Association."

Resolution on Care of War Veterans

Dr. Charles E. Riggs, U. S. Navy, presented the following resolution, which was presented to the Reference Committee on Legislation and Public Relations:

WHEREAS, For a number of years disabled war veterans have been cared for in hospitals operated by the Veterans' Administration, the Army, Navy, and the Public Health Service, and

WHEREAS, The executive orders and regulations promulgated by the President on March 31 (Reg. No. 10, par. XIX), do not permit the utilization of hospitals of the Army, Navy and Public Health Service, except in an occasional emergency case where the disablement requiring treatment is a result of service, and

WHEREAS, This discontinuance of the use of the hospitals of the regular establishments has already (June 3, 1933) resulted in producing 6,000 unoccupied beds formerly employed for the treatment of war veterans, and

WHEREAS, The high standards of medicine and surgery, the excellent and extensive clinical equipment and the modern structures of the regular services have partially been made possible because of the fact that the war veterans have been assigned to these services for treatment, and

WHEREAS, The diminution in service will make it necessary to surplus much professional and other personnel, thus impairing the efficiency of the hospitals of the regular services, and

WHEREAS, It is manifestly desirable to maintain these hospitals at maximum efficiency so to meet any possible emergencies, and

WHEREAS, Many of the hospitals of the regular services are located so that they are more accessible to veterans than some of the hospitals of the Veterans' Administration; therefore be it

Resolved, By the American Medical Association in national conference assembled that the House of Delegates of the Association request that the Board of Trustees approach the President of the United States, asking his consideration of the proposition of so relaxing the executive orders as to permit the care of service connected war veterans, generally, and those cases requiring hospital treatment, in hospitals of the

regular services, in instances where time, distance, convenience and the nature of the treatment required to be extended so as to wherever possible make use of Army, Navy, or Public Health Service hospitals.

Resolution Limiting Physicians for Hospital Staffs to Members of Association

Dr. G. Henry Mundt, Illinois, presented the following resolution, which was referred to the Reference Committee on Medical Education:

The following resolution was introduced at the 1932 (New Orleans) Session of the American Medical Association. The reference committee in submitting it to the House made the following comment: "The reference committee regards this resolution as an expression of opinion in favor of a standard which should be striven for, and as such approves it, recognizing at the same time that it may not be desirable at present to make it a hard and fast rule." In accordance with that comment I am now requesting the House of Delegates of the American Medical Association to adopt the following resolution:

Resolved, That it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates request the Council on Medical Education and Hospitals to take this under advisement.

Resolutions on Amount of Clinical Material for Teaching and Research and on Competitive Practice of Medicine

Dr. G. Henry Mundt, Illinois, presented the following resolution, which was referred to the Reference Committee on Medical Education:

At the recent (1933) meeting of the Illinois State Medical Society the following resolution was unanimously adopted and this resolution is presented to ask the concurrence of the House of Delegates of the American Medical Association in the opinion expressed by the House of Delegates of the Illinois State Medical Society.

Resolved, That it is the opinion of the House of Delegates of the Illinois State Medical Society that medical schools should restrict the amount of clinical material used to the amount needed for teaching and research.

Second, That medical schools should not enter into medical practice in competition with private practitioners of medicine.

Third, That the House of Delegates of the Illinois State Medical Society request the House of Delegates of the American Medical Association to request the Council on Medical Education and Hospitals to submit a plan:

- To restrict the amount of clinical material used by medical schools to the amount needed for teaching and research, and
- To restrict the competitive practice of medicine by medical schools.

Resolution Endorsing Minority Report of Committee on the Costs of Medical Care

Dr. Henry C. Macatee, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Medical Society of the District of Columbia has endorsed the Minority Report of the Committee on the Costs of Medical Care, and has undertaken to engage in an intensive campaign to educate and inform its constituency regarding the socio-economic aspects of medical practice, with a view to the maintenance of high ethical standards and the preservation of professional ideals:

- By the dissemination of literature;
- By the organization of a speakers' bureau for the purpose of presenting various aspects of the subject to the membership;
- By the organization and conduct of study groups; and
- By the employment of such other means as may from time to time be deemed expedient for that purpose, and

WHEREAS, The Medical Society of the District of Columbia has by resolution instructed its delegate to endeavor to secure the support of the American Medical Association both of the Minority Report of the Committee on the Costs of Medical Care, and of the society's plan for promoting harmony of professional opinion and action on the socio-economic aspects of the practice of medicine;

Resolved, That the House of Delegates of the American Medical Association endorses the Minority Report of the Committee on the Costs of Medical Care as expressive, in principle, of the collective opinion of the medical profession; and, in order to clarify and harmonize the thinking of the individual members of the profession on the general subject of the said report, and on allied subjects.

Resolved, That the Board of Trustees be requested to undertake "the sponsorship, direction and active participation by the American Medical Association in an intensive campaign to be conducted in cooperation with its constituent bodies for the purpose and along the lines indicated" in the first paragraph of the preamble to this resolution.

Resolution on Creation of Committee for Study of Birth Control

Dr. E. D. Plass, Iowa, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The problems and methods of birth control are of vital concern to the health as well as to the social and economic welfare of our American people, and

WHEREAS, The statements of proponents and opponents of birth control are at wide variance, thereby creating confusion and uncertainty, and

WHEREAS, A demand has been made by various groups for dependable evaluation of methods of contraception and of the conditions that justify their employment, and

WHEREAS, These questions are intimately related to medical science and medical practice; therefore be it

Resolved: 1. That this House of Delegates create a special committee of five on "The Study of Contraception" to be appointed by the Speaker, with the advice of the Executive Committee of the Board of Trustees,

2. That this committee is hereby instructed to study the problem of birth control in all its aspects, particularly as they relate to methods of contraception, conditions indicating its employment, and the best manner of imparting instruction to physicians and to the lay public,

3. That this committee be provided by the Council on Pharmacy and Chemistry with a statement of the value and effectiveness of contraceptive products and preparations that are or may be recommended by manufacturers; and be it

Resolved, That the Board of Trustees be requested to instruct the Council on Pharmacy and Chemistry to render all reasonable assistance and advice to this special committee, and to provide this special committee with a fund to be determined after conference with the Committee Chairman, for clerical and correspondence expenses; and be it

Resolved, That the report of this committee, together with all its findings and recommendations, be not disclosed until it has been presented to the 1934 Executive Session of this House of Delegates for consideration and action by this House of Delegates; and be it

Resolved, That the appointment of this special committee shall in no way be construed as an endorsement of birth control on the part of the American Medical Association and that, on the contrary, the appointment of this committee is for the purpose of compiling dependable facts for future guidance when dealing with this question as closely related to public health and medical practice.

Communication Regarding Exploitation of Physicians and Proposed Amendment to By-Laws

Dr. Arthur C. Morgan, Pennsylvania, presented the following communication regarding the exploitation of physicians and proposed an amendment to chapter IX, section 2, of the By-Laws, which was referred to the Reference Committee on Amendments to Constitution and By-Laws:

The singleness of their positions in hospital practice exposes the radiologist and the pathologist to imposition. Many institutions collect and retain their fees, or attempt by taking a percentage of the fees to make a profit from the medical services of these physicians. Those practices constitute exploitation of the physician and are forms of contract practice dangerous to the best interests of the public and the profession.

They are dangerous to the public in that continuance and spread will oblige capable men, because of resentment of exploitation, to avoid entering these fields, and advancement of these two important branches of medicine will be retarded with resultant loss to public welfare. They are dangerous to the medical profession in that they encourage self-seeking interests to exploit other practitioners by the same methods.

While many hospital laboratories are ostensibly under the control of physicians, they are actually controlled by laymen who cause the hospitals to enter into practices and schemes which violate the ethics of the American Medical Association, among them direct solicitation of patients, and the issuance of fee lists and advertising matter.

In view of these facts it is recommended that the Council on Medical Education and Hospitals be instructed to remove annually from their lists of recognized and approved hospitals any institution in which, in the opinion of the county medical society of the county in which the hospital is located, these forms of exploitation are practiced, and from their lists of approved radiologists or approved pathologists any physician who, in the opinion of his county medical society, persists in being a party to these unethical practices.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.
CHARLES F. NASSAU,
President.
FRANKLIN M. CRISPIN,
Executive Secretary.
ARTHUR C. MORGAN.

PROPOSED AMENDMENT TO THE BY-LAWS OF THE AMERICAN MEDICAL ASSOCIATION

It is recommended that chapter IX, section 2, of the By-Laws of the Association be amended to read as follows:

SEC. 2. COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.—The functions of the Council on Medical Education and Hospitals shall be: (1) To investigate conditions of medical education, hospitals and associated subjects and to suggest means and methods by which the

same may be improved. (2) To endeavor to further the realization of such suggestions as may be approved by the House of Delegates. (3) No hospital shall be admitted to the lists of recognized hospitals, and hospitals approved for intern and special training, unless, in addition to meeting the criteria formulated from time to time by the Council it shall also receive annually the approval of the county medical society of the county in which the hospital is located.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

CHARLES F. NASSAU,
President.
FRANKLIN M. CRISPIN,
Executive Secretary.
ARTHUR C. MORGAN.

Resolution on Limiting Number of Medical Graduates

Dr. Arthur J. Bedell, New York, presented the following resolution passed by the house of delegates of the Medical Society of the State of New York, which was referred to the Reference Committee on Medical Education:

Resolved, That the Delegates to the American Medical Association be instructed to ask for a study to be made by the Council on Medical Education and Hospitals of the American Medical Association as to the actual yearly need of medical men for our country, and if it find, from that study, that there are more graduates yearly than are needed, it should use its influence to bring about a limitation of the number of medical matriculants, and hence of medical graduates.

Resolution on Curriculums of Medical Schools

Dr. R. L. Sensenich, Indiana, presented the following resolution, which was referred to the Reference Committee on Medical Education:

Resolved, That it is the opinion of the House of Delegates of the American Medical Association that the curriculum of the medical schools of this country should include some time to be devoted to the training of the student in the basic business procedures necessary successfully to conduct the business of a medical practice.

R. L. SENSENICH,
F. S. CROCKETT,
H. G. HAMER,
D. F. CAMERON.
Delegates
Indiana State Medical Association.

Resolutions on Housing of Army Medical Library and Museum

Dr. Holman Taylor, Texas, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Beginning during the administration of Surgeon General Lovell (1818), the Army Medical Library, also known as the Library of the Surgeon General's Office, has been built up by the Medical Department of the Army at comparatively small cost to the Government, and

WHEREAS, The Army Medical Library, now the largest medical library in the world, has been called, both in Europe and in America, "America's greatest contribution to medicine," and

WHEREAS, As long ago as 1870 a European authority stated that "in five years the United States had done as much in the matter of an anatomical-pathological museum (i. e., the Army Medical Museum), as had been done in all of Europe in a century," since which time the Army Medical Museum has steadily and rapidly grown, its collection today being more than three times as large as at the outbreak of the World War, and

WHEREAS, The important collections of the Army Medical Library and Museum are at present housed in an antiquated building, not fireproof and no longer large enough to contain these institutions, with the result that the work is being hampered, and

WHEREAS, The building occupied by the Army Medical Library and Museum will have to be demolished in accordance with the plans of the Public Buildings Commission for the beautification of Washington already adopted by Congress, and

WHEREAS, The Army Medical Library and Museum serve not only all governmental departments but also the entire medical profession of America and other countries, and without their help much of the research and clinical work now being carried on by our profession would be impracticable, and

WHEREAS, The Public Works Bill now before Congress contemplates the appropriation of the sum of \$3,300,000,000 to erect public buildings and to complete other necessary construction, and likewise to provide employment; therefore be it

Resolved, That the American Medical Association, in annual meeting assembled, respectfully request that the sum of \$2,000,000 be set aside for the purpose of constructing new buildings to house the Army Medical Library and Museum on the site which has already been provided by Congress, and which has now been available for this purpose for more than fourteen years, namely, adjacent to the Army Medical School and the Walter Reed General Hospital at the Army Medical Center, Washington, D. C.; and be it further

Resolved, That copies of these resolutions be sent to the President of the United States, the President of the Senate, the Speaker of the House of Representatives, the chairman of the Appropriations Committee of the Senate, the chairman of the Appropriations Committee of the House of

Representatives, the chairman of the Military Affairs Committee of the Senate, the Chairman of the Military Affairs Committee of the House, and to the Secretary of War.

Communication from the Department of Vital Statistics

Dr. Olin West, Secretary, presented a communication from the chief statistician of Vital Statistics of the Bureau of the Census, which was referred to the Reference Committee on Hygiene and Public Health.

Resolution Requesting National Medical Organizations to Declare Opinions on Medical Practice Through Approved Channels

Dr. Olin West, Secretary, presented a resolution that was adopted by the Council of the State Medical Society of Wisconsin, which is similar to a resolution from the Medical Society of the State of Pennsylvania that was presented to the House earlier. This resolution was referred to the Reference Committee on Rules and Order of Business.

Resolutions Dealing with the Foreign Political Situation

The Speaker referred to the Reference Committee on Legislation and Public Relations, without reading, two resolutions dealing with the foreign political situation that were mailed to the Secretary.

The meeting adjourned at 12:55 p. m., to reconvene at 9:30 Tuesday morning, June 13.

Second Meeting—Tuesday Morning, June 13

The House of Delegates was called to order at 9:30 a. m. by the Speaker, Dr. F. C. Warnshuis.

Dr. E. G. Wood, Tennessee, moved that the attendance slips constitute the roll call of the House. The motion was seconded by Dr. C. S. Gorsline, Michigan, and carried.

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, the House dispensed with the reading of the minutes.

Report of Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported irregularities, mostly due to lost cards, all coming under the rules under which the committee operates, and recommended that the following named gentlemen be seated: Drs. George Blumer, Connecticut; C. W. Hibbitt, Kentucky; Charles E. Mongan, Massachusetts; Felix J. Underwood, Mississippi; B. R. McClellan, Ohio; J. Norman Henry, and S. P. Mengel, Pennsylvania; J. J. Crume, Texas; George H. Scott, U. S. Army; Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, and H. W. E. Walther, Section on Urology. He added that there were 159 registrations.

There being no objections, the Speaker stated that the supplementary report of the committee would be received and placed on file.

Dr. Brook also reported that since Dr. W. T. Rainey, North Carolina, is not a Fellow of the American Medical Association and, under section 1, chapter I, of the By-Laws, is not eligible to a seat in this House, the committee recommended that he be not seated.

Dr. H. A. Luce, Michigan, supported the recommendation, which was carried by vote of the House, and Dr. Rainey was not seated.

Report of Council on Scientific Assembly

Dr. John Edward Lane, Chairman, presented the following report, which was adopted on motion of Dr. Lane, seconded by Dr. H. B. Everett, Tennessee, and carried:

A communication from Dr. Alfred J. Asgis, director of the American Society of Stomatologists, requesting the formation of a Section on Stomatology, has been referred to the Council on Scientific Assembly by the House of Delegates.

There was formerly a Section on Stomatology in the American Medical Association. Largely because of small attendance and difficulty in arranging programs, this section was discontinued some years ago.

After due consideration the Council on Scientific Assembly feels that it would, at present, be unwise to reestablish this section or, as requested by Dr. Asgis, to establish a subsection in one of the already existing sections. The medical aspects of stomatology, as they relate to the various specialties of medicine, may be presented appropriately in the respective sections.

The Council on Scientific Assembly therefore recommends to the House of Delegates that a Section on Stomatology be not established.

Respectfully submitted.

JOHN E. LANE, Chairman.
IRVIN ABELL.
FRANK H. LAHEY.
ROGER MORRIS.
FRANK SMITHIES.

Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report:

The Judicial Council recommends to the House of Delegates that the name of Dr. H. D. Pease of New York be dropped from the roll of members of the American Medical Association because of unethical conduct.

On motion of Dr. Follansbee, seconded by Dr. Arthur J. Bedell, New York, and carried, the report was adopted.

Report of Board of Trustees

Dr. J. H. J. Upham, for the Board of Trustees, presented the following report:

1. Relative to the resolution introduced by Dr. Charles E. Riggs, the Board expresses the belief that the recently established permanent representative in Washington and the provision for suitable appearance before representative bodies by members of the staff of the Bureau of Legal Medicine and Legislation, as well as by members of the Committee on Legislative Activities, will accomplish all that is contemplated in this resolution. The Board has not yet had opportunity to prove that anything more is necessary; therefore it does not recommend the adoption of the resolution introduced by Dr. Riggs.

2. Concerning the resolution on occupational therapy, introduced by Dr. J. Gurney Taylor, Wisconsin, the Board recommends that this resolution be referred to the Council on Physical Therapy and the Council on Medical Education and Hospitals for consideration and investigation.

Dr. Louis J. Hirschman, Michigan, moved the adoption of the first section of the report, which was seconded by Dr. C. B. Wright, Minnesota, and carried.

On motion of Dr. C. S. Gorsline, Michigan, seconded by Dr. H. B. Everett, Tennessee, and carried, the second section of the report was adopted.

The report of the Board of Trustees was then adopted as a whole.

Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

1. The Reference Committee on Hygiene and Public Health recommends the adoption of the resolution in regard to activities and efforts to terminate misleading and misrepresenting radio broadcasting, relating to medicinal remedies and preparations for the conservation and protection of the health interests of the public.

2. The Reference Committee on Hygiene and Public Health recommends the adoption of that part of the report of the Board of Trustees which deals with the Bureau of Health and Public Instruction.

3. The Reference Committee on Hygiene and Public Health recommends the indorsement by the House of Delegates of the American Medical Association of the work of the Division of Vital Statistics of the Federal Bureau of the Census. It recommends further that the members of the Association interest themselves in the valuable work of the Division of Vital Statistics as related to the medical profession, and that they render their assistance either as members of county, state or other organizations, or as individuals.

Dr. Draper moved that the first section of the report be adopted, and the motion was seconded by Dr. C. W. Roberts,

Georgia. On suggestion of Dr. Holman Taylor, Texas, the resolution referred to in this section of the report was amended to read as follows:

WHEREAS, Radio broadcasting is under the control of the Federal Radio Commission, and

WHEREAS, There appear to be no apparent restrictions of the advertising statements and claims that are being broadcast, and

WHEREAS, It appears that the radio is being employed to broadcast unsupported claims and statements related to a large number of alleged preparations for the cure of many ailments and diseases, thereby misleading the public; therefore be it

Resolved, That the Board of Trustees, through the Bureau of Investigation, and through such other national organizations as the Board may be able to enlist, initiate and pursue activities and efforts to terminate misleading and misrepresenting radio broadcasting that is related to medicinal remedies and preparations for the conservation and protection of the health interests of the public.

The first section of the report was adopted, with the resolution as amended, after discussion by Dr. George Blumcr, Connecticut.

It was moved by Dr. Draper, seconded by Dr. Felix J. Underwood, Mississippi, and carried, that the second section of the report be adopted.

On motion of Dr. Draper, seconded by Dr. Joseph F. Smith, Wisconsin, and carried, the third section of the report was adopted.

Dr. Draper moved the adoption of the report as a whole. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. Holman Taylor, Chairman, presented the following report:

1. A resolution by Dr. Southgate Leigh, delegate of the Medical Society of Virginia, provides that presidents of constituent state medical associations shall be ex officio members of the House of Delegates. Reference to the matter will be found on page 35 of the Handbook in the report of the Secretary.

Your committee recommends that the words "without the right of vote" be added to the amendment immediately following the words "shall be ex officio members."

Your committee warmly approves of the purpose underlying the proposed amendment, which is, in short, that a very definite and direct connection between the American Medical Association and its constituent state associations be thus effected, but it is felt that should such an amendment to the Constitution be adopted, the net results would be a greater confusion of tongues than exists at the present time; in other words, that the added discussion, from even very able members, who must speak without authority, would help little and doubtless prolong discussion unduly. We recommend that the amendment do not pass.

2. The following amendment to chapter IX, section 2, of the By-Laws of the Association, introduced by Dr. Arthur C. Morgan at the instance of the Philadelphia County Medical Society, has been before your committee:

SEC. 2. COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.—The functions of the Council on Medical Education and Hospitals shall be: (1) To investigate conditions of medical education, hospitals and associated subjects and to suggest means and methods by which same may be improved. (2) To endeavor to further the realization of such suggestions as may be approved by the House of Delegates. (3) No hospital shall be admitted to the lists of recognized hospitals, and hospitals approved for intern and special training, unless, in addition to meeting the criteria formulated from time to time by the Council it shall also receive annually the approval of the county medical society of the county in which the hospital is located.

Your committee is of the opinion that the added provision would tend to confuse and complicate a situation already sufficiently difficult, and that the matter of listing hospitals of whatsoever type or character had better remain as at present, wholly in the hands of the Council on Medical Education and Hospitals, which council, as we understand it, now takes into consideration the opinion of county medical societies and their members, when such opinion may be obtained. We recommend that the amendment be not passed.

3. The question having been raised before our committee, we take the liberty of suggesting to the House of Delegates that the Board of Trustees may help to bring constituent state associations into closer touch and more direct contact with the

American Medical Association by sending representatives of the American Medical Association to states which have not requested the favor, as well as into states which have asked for such help.

Respectfully submitted.

HOLMAN TAYLOR, Chairman.
BEN R. MCCLELLAN.
JAMES R. BLOSS.
E. L. SKIDMORE.
J. M. BIRNIE.

Dr. Taylor moved that the amendment to the amendment, proposed in the second paragraph of the first section of the report be adopted. The motion was seconded by Dr. H. H. Shoulders, Tennessee. After discussion by Drs. H. H. Shoulders, Tennessee, Holman Taylor, Texas, and B. F. Bailey, Nebraska, Dr. Mather Pfeifferberger, Illinois, moved that the motion be tabled. The motion to table was seconded by Dr. R. W. Fouts, Nebraska, and carried, after the Speaker ruled that the tabling also included the amendment proposed by the reference committee.

Dr. Horace Reed, Oklahoma, moved the adoption of the recommendation of the committee contained in the third paragraph of the first section of the report. The motion was seconded by Dr. A. A. Ross, Texas, and carried.

Dr. Taylor moved that the recommendation of the committee contained in the second section of the report be adopted. Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, seconded the motion, which was carried.

The third section of the report was adopted on motion of Dr. Taylor, seconded by Dr. Southgate Leigh, Virginia, and carried, after which the report was adopted as a whole, with the exception of that part that had been tabled.

Report of Reference Committee on Reports of Officers

Dr. F. S. Crockett, Chairman, presented the following report:

1. Your committee wishes to commend the masterful address of our President. The work which he has done and the principles which he enumerates are so thoroughly in accord with the best thoughts of organized medicine that we urge a perusal of this splendid document by each member of the Association when it appears in our official organ. He reviewed the year's accomplishments, calling attention to the successful issues attained: (1) the right of the physician to use his own judgment in prescribing alcoholic liquors; (2) the defeat of Sheppard-Townerism and the substitution of state and local agencies for federal bureaucracy; (3) the steps taken in further control of narcotics through uniform state legislation; (4) the activities of the legislative committee in regard to veterans' care, which, without doubt, exerted marked influence in the recent executive orders affecting the hospitalization of cases having no service origin; (5) endorsing the Minority Report of the Committee on the Costs of Medical Care and calling attention to the soundness of the principles enunciated; (6) the need for unity of spirit and professional desire in our county and state societies as a necessary corollary to successful action through our national Association.

2. Your committee endorses the views of the President-Elect in his interpretations of the attitude the medical profession should take in regard to the care of the veterans. To this end we would call attention to his suggestion that, after all, the personal contact of the doctor with his representative in the legislature is one of the most vital factors in influencing legislation along this line. The President-Elect has well touched on the cost of medical care and emphasized an important phase sometimes overlooked in the high cost of hospital construction, which greatly increases the cost without increased benefits to the patient. Your committee also commends his attitude against questionable forms of insurance for the care of the sick. He likewise admirably states his conviction that merging of hospitals in many communities would lead to better service to all parties concerned. He deals with the limitation of specialism and the simplification of medical practice, which we believe should provide for a more satisfactory relationship of medical practice in the light of changes now in progress, especially in medical education.

3. Your committee would stress the caution as given to this House of Delegates by the Speaker in considering resolutions about to be presented and urge that it is to be remembered

that we are a confederation of many minds, and as doctors work under varying conditions, so that new resolutions and changes should be only those enumerating principles which are to maintain for long periods of time. For his usual genial, kindly and strict, yet impartial, guidance in our deliberations, as a presiding officer, your committee feels that this Association has been particularly fortunate.

4. Your reference committee approves the report of the Judicial Council and recommends its adoption as read. Dr. Edwin P. Sloan, a member of the Judicial Council, appeared before the committee and suggested the following additions to that part of the report concerning contract practice, as follows:

I wish to propose that the second paragraph of the proposed addition to the section on contract practice in the report of the Judicial Council be changed as follows:

Following the word "unethical" at the end of the first sentence of that paragraph insert:

"Under some conditions adequate service can be provided only by contract practice and is essential for the public welfare."

Following the word "patients" at the end of the sentence indicated by (6) insert:

"(7) When his professional services are controlled or exploited by any intermediary agency, personal or corporate, which intervenes between physician and patient."

Your committee recommends that these additions be referred to the Judicial Council for its study and consideration.

Dr. Crockett moved the adoption of the first section of the report dealing with the address of the President. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

On motion of Dr. Crockett, seconded by Dr. W. F. Braasch, Minnesota, and carried, the second section of the report, referring to the address of the President-Elect, was adopted.

With Dr. E. H. Cary, President, in the chair, it was moved by Dr. Crockett, seconded by Dr. Horace Reed, Oklahoma, and carried, that the third section of the report dealing with the address of the Speaker be adopted.

The recommendations contained in the fourth section of the report, which refer to the report of the Judicial Council, were adopted on motion of Dr. Crockett, seconded by Dr. G. Henry Mundt, Illinois, and carried, and the report of the reference committee was then adopted as a whole.

Remarks of Dr. George H. Simmons

The Speaker presented Dr. George H. Simmons, Editor and General Manager Emeritus, who spoke as follows:

Mr. Speaker, you know perfectly well that I can't make a speech, that I hate to hear myself talk. You persist in ignoring me in that.

It certainly is a pleasure to me to meet pretty nearly every year with the House of Delegates. As you know, I was at its birth, saw the struggle at that first meeting at Saratoga Springs. How many are present who were there? [Four.] It was a sorry hour for about an hour, but soon after that everything went smoothly, and, so far as I know, it has been going smoothly ever since.

I notice year by year problems coming up—the same old problems that you have to look at from a different angle because social conditions are changing, political conditions are changing, and we are changing. But I notice as these problems are met and solved—or laid on the table—we still make progress up.

I can't express to you what I feel with regard to this House of Delegates as being a body of men selected to represent the medical profession of the whole country, and how much depends on your action. Probably you all realize it as much as I do, and I have no suggestions of criticism, nothing of the kind, but it is a responsibility that you gentlemen are holding, and especially in these times. I have no doubt the problems as they come up will be solved satisfactorily to us, and as the president of the State Medical Society of Wisconsin said last night, "Onward, forward!"

Report of Reference Committee on Reports of Board of Trustees and Secretary.

Dr. Nathan B. Van Etten, Chairman, presented the following report:

Your Reference Committee on Reports of Board of Trustees and Secretary notes with regret a net loss of members and Fellows but believes that general economic conditions must be charged with the chief responsibility and that reestablishment

of normal conditions and a renewed interest in the value of medical organization will soon bring the membership and Fellowship up to higher numbers than before.

Your reference committee views with satisfaction the increased interest in the field work of the Association as shown in the increasing number of requests for official visits, heartily commends the remarkable response to these requests by the President, the President-Elect, Trustees, Secretary, Editor and the other administrative personnel, and believing that this work will be increasingly necessary for the cohesion and development of our component elements, your reference committee recommends the consideration by the Board of Trustees of the advisability of the appointment of a Field Secretary to meet the growing demand for interpretation of the Association to the membership, the activity of such an appointee in no way to interfere with the invaluable work of the present Bureau of Medical Economics.

Your reference committee highly commends the increasingly valuable and tactful service of the Secretary and General Manager and wishes him many years of continued success.

Your reference committee congratulates the Board of Trustees on the remarkable success of the investment committee's selection of securities resulting in the maintenance of so high a return on invested capital, and the general conduct of the finances of the Association with such discriminating economy that the fluid solvency of the Association has been at all times maintained.

Your reference committee applauds the successful issue of the defense of the suit brought against the Association by Baker of Muscatine, Iowa.

Your reference committee observes with regret the loss of \$32,875 through the publication of the special journals and recommends to the Trustees either temporary curtailment or raising the subscription price of these journals in order to reduce this deficiency.

Your reference committee notes with satisfaction the inclusion of the discussion of economics in so impartial and impersonal a manner in *THE JOURNAL*, approves the maintenance of the high quality of *THE JOURNAL* at so low a subscription price, and recommends the continuation of the present general policy.

Your reference committee laments the financial burden of the *QUARTERLY CUMULATIVE INDEX* but believes that its value to scientific medicine is so great that its publication should be maintained.

Your reference committee applauds the success of *HYGEIA*.

Your reference committee approves of the action of the Trustees in the publication of the Directory.

Your reference committee approves of the extension of the Library and hopes for its continued growth and ultimately competent and dignified housing.

Your reference committee approves of the action of the Trustees in the continuation of their emergency policy relating to Fellowships and subscriptions.

Your reference committee commends the Council on Pharmacy and Chemistry and the Chemical Laboratory and urges a continuation of the maintenance of their high standards of honesty and excellence.

Your reference committee commends the action of the Council on Physical Therapy and recommends the spread of education concerning the values and the dangers attending the employment of physical therapy apparatus by untrained people, and the control of deceptive advertising and high pressure salesmanship.

Your reference committee believes that the Bureau of Investigation is highly valuable and that its work should be continued and extended.

Your reference committee heartily commends the Bureau of Exhibits and congratulates it on the marvelous development of its scientific and educational presentations.

Your reference committee believes that the work of the Committee on Foods is being carried on with exceptional fidelity to insistence on honest advertising and promotion of public welfare.

The report of the reference committee, on motions duly seconded and carried, was adopted section by section and, on motion of Dr. Van Etten, seconded by Dr. Arthur J. Bedell, New York, and carried, the report was adopted as a whole.

Report of Reference Committee on Miscellaneous Business

Dr. H. M. Johnson, Chairman, presented the following report:

Your committee would recommend that the Board of Trustees of the American Medical Association be requested to take the necessary steps to carry out the fulfillment of the resolution introduced by Dr. Holman Taylor, Texas, and referred to this committee.

H. M. JOHNSON, Chairman.
A. R. McCOMAS.
B. L. BRYANT.
J. F. HASSIG.
GEORGE BLUMER.

On motion of Dr. Johnson, seconded by Dr. Louis J. Hirschman, Michigan, and carried, the report was adopted.

Report of Reference Committee on Rules and Order of Business

Dr. John F. Hagerty, Chairman, presented the following report:

1. The committee endorses the resolutions that constituent associations elect their delegates far enough in advance so that the names of all delegates may be properly listed in the Handbook of the House of Delegates, and approves of the suggestion, where possible, that the terms of delegates run from January 1 to December 31 of the years for which they are elected. It also endorses the suggestion that copies of this resolution be sent to the secretaries of all constituent associations.

2. The committee also endorses the resolutions presented by the board of trustees of the Medical Society of the State of Pennsylvania and the council of the State Medical Society of Wisconsin, which are practically identical and which declare that all public opinions on general, social, legislative and economic relationships of medical practice be made only through approved channels of the American Medical Association.

Respectfully submitted. JOHN F. HAGERTY, Chairman.

Dr. Hagerty moved the adoption of the first section of the report with respect to the election of delegates by constituent associations and the motion was seconded by Dr. William H. Myers, Georgia. The resolutions were referred back to the committee after discussion by the Secretary.

On motion of Dr. Hagerty, seconded by Dr. William R. Molony, California, and carried, the second section of the report, endorsing the resolutions declaring that all public opinions on general social, legislative and economic relationships of medical practice be made only through approved channels of the American Medical Association, was adopted.

Remarks of Dr. Hubert Work

The Speaker presented Dr. Hubert Work who addressed the House as follows:

Mr. Speaker, I thank you cordially for this opportunity to look the House of Delegates in the face again. I once occupied the position your Speaker does and I spent many a happy and many an anxious hour before this House of Delegates.

Mr. Speaker, if the temper of the House is as it used to be, when they always appraised a speech by the brevity of it, I just simply want to say to you hail and farewell.

Report of Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, presented the following report:

The report of the Council on Medical Education and Hospitals displays a comprehensive grasp of the problems presented in these fields and the employment of constructive efforts to advance their solution. The resolution embodied in paragraph 2 of the report reading, "Resolved, That should the House of Delegates so order, the Council is prepared to extend to other special fields of medicine the service which it has rendered in the fields of radiology and pathology to the end that members of the medical profession and others who may be concerned may be able readily to distinguish those who have received training in the various branches of medicine from those who are merely self-constituted 'specialists,'" is recommended for adoption.

It is recommended that the handbook entitled Hospital Practice for Interns, listed as one of the publications of the Council, be adopted by the hospitals on the approved list and that such institutions place copies at the disposal of the interns.

The Council is to be commended for its initiative in securing adoption by the Federation of State Medical Boards of the United States of the resolutions pertaining to the matriculation of American students in European schools and to the admission of American graduates of such schools to state medical licensing examinations to the end that migration of less desirable students might be in a measure restrained.

The paragraph in the report of the Council dealing with hospital activities reveals the large extent of the work done in this field. The fact that 241 hospitals have been dropped from the register shows the fidelity with which standards are maintained, while the program for the current year indicates an extension of comprehensive investigation.

The report shows the large amount of worth-while work done in the classification of pathologists and radiologists, 1,725 physicians having been classified in the two groups. In view of the classification of specialists heretofore authorized, it is suggested by the Reference Committee that examining boards for these specialties be created whose standards will in degree approximate those for the remaining specialties.

The supplement dealing with Essentials of an Acceptable Medical School, with its Appendix, is recommended for adoption.

The supplement dealing with Essentials in a Hospital Approved for Residencies in Specialties is recommended for adoption.

The report of the Committee on Mental Health reveals a painstaking and intelligent study of the subject and its perusal is recommended to every member of the House of Delegates for his information. The Reference Committee concurs fully in the summary projected by the Committee on Mental Health but would differ from it in its recommendations. The establishment of a bureau or committee of mental health, composed of physicians with special training and experience in the field of mental health, while theoretically desirable, is, under existing conditions, somewhat impracticable, both because of the expense entailed and because of the duplication of efforts which may be effectually dispensed by other bureaus. For these reasons the Reference Committee recommends that the subdivisions of work suggested by the Committee on Mental Health be carried on under the supervision of the Board of Trustees through the following channels: (1) "psychiatry in relation to medical education and hospitals" through the Council on Medical Education and Hospitals; (2) "public policies and procedures in mental health administration" through the Bureau of Legal Medicine and Legislation; (3) "research in mental health" and (4) "dissemination of information" through the Bureau of Health and Public Instruction.

The resolution passed by the house of delegates of the Medical Society of the State of New York, April 3, 1933, presented by Dr. Bedell, requests a study by the Council on Medical Education and Hospitals as to the actual yearly need of medical men for our country and, in the event of finding the present supply excessive, the use of its influence in bringing about a limitation. The reference committee recommends that no action be taken, since the subject matter of this resolution is fully covered in paragraph 12 of the Report of the Council on Medical Education and Hospitals.

The resolution of the delegates of the Indiana State Medical Association, introduced by Dr. Sensenich, in which the opinion of the House of Delegates is expressed that the curriculum of the medical schools of this country should include some time to be devoted to the training of the student in the basic business procedures necessary to conduct successfully the business of a medical practice, is recommended for adoption.

The resolution of the Illinois State Medical Society, introduced by Dr. G. H. Mundt, requests the House of Delegates of the American Medical Association to request the Council on Medical Education and Hospitals to submit a plan (a) to restrict the amount of clinical material used by medical schools to the amount needed for teaching and research and (b) to restrict the competitive practice by schools of medicine. The widely differing conditions that exist in various parts of our

country are such that it does not seem feasible to the Reference Committee to adopt uniform regulations that would be equitable to all parties concerned. The competitive practice of medical schools, particularly so far as it relates to pay patients, is to be discouraged and condemned. Since the Council on Medical Education and Hospitals is conversant with the conditions which exist in all parts of the country, the Reference Committee recommends that the resolution be referred to it without action for its consideration.

A resolution introduced by Dr. G. H. Mundt defines the opinion of the House of Delegates to be that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates request the Council on Medical Education and Hospitals to take this under advisement. Paragraph 5 of the report of the Council states that, as a result of the introduction of this resolution last year, a study of 110 institutions with 9,933 physicians on their respective staffs showed 66.4 per cent to be Fellows and 20.6 per cent members of the American Medical Association. The Reference Committee finds itself in harmony with the comment made last year on this resolution by the then reference committee; namely, "It regards this resolution as an expression of opinion in favor of a standard which should be striven for, and as such approves it, recognizing at the same time that it may not be desirable at present to make it a hard and fast rule."

Resolutions introduced by Dr. Hirschman of Michigan suggest activities on medical education and hospitals as follows:

Resolved, That the Board of Trustees be directed to cause the Council on Medical Education and Hospitals to become aggressively active in:

(a) Evaluating and comparing the merits of the curriculums of approved medical colleges and those alleged colleges operated by the cults.

This information is on file and available at the office of the Council.

(b) A study of medical matriculates and graduates for the purpose of determining annual quotas of admission of students.

This information is also available at the office of the Council, much of it being quoted in paragraph 12 of the 1933 report.

(c) Devising a course of lectures and demonstrations related to medical ethics, economics, office and practice business details, relationship of physician to patient and public and the fundamental purposes and activities of county, state and national organizations and causing their inclusion in curriculums of approved colleges.

The subject matter of this section is partly covered in the recommendation contained in the resolution introduced by Dr. Sensenich of the Indiana delegation; the remainder is referred with approval of the Reference Committee to the Council on Medical Education and Hospitals.

(d) Advisability of accepting a year of association with an approved general practitioner of medicine in lieu of the intern hospital year for all graduates desiring to enter general practice.

The Reference Committee disapproves of this section and recommends that it be not adopted.

(e) A study and devising of a plan that will abolish the so-called state board examination (often farcical and not at all competent to determine a candidate's qualifications), and in lieu of such examination accept a certification of an approved medical college as to the candidate's training and graduation.

The Reference Committee recommends that this be referred without comment to the Council on Medical Education and Hospitals.

(f) Devising a plan and procedure for the certification of specialists in all branches of medicine and surgery.

This section is fully covered by the resolution embodied in paragraph 2 of the report of the Council.

Be it further

Resolved, That the Council on Medical Education and Hospitals impart through effective channels its studies, conclusions and recommendations for the information, advice and guidance of the public and the profession in order that our social readjustments may be influenced by such authentic and dependable information and recommendations.

The Reference Committee recommends that the activities mentioned in this paragraph be discharged by the Bureau of Health and Public Instruction.

A resolution introduced by Dr. Samuel J. Kopetzky of New York pertains to the adoption of a national and uniform standard by which specialists may be known and recognized by their fellows in the profession. Dr. Kopetzky's resolution was fully and freely discussed in the committee by Dr. Fishbein representing the Board of Trustees, by the members of the Council on Medical Education and Hospitals, and by the representatives of the examining boards of the special societies. As a result of this conference the Reference Committee recommends for adoption the following resolution as an amendment to that introduced by Dr. Kopetzky:

WHEREAS, The Council on Medical Education and Hospitals for something more than a quarter of a century has been engaged in formulating standards for the training of physicians, and through its policy of investigation and publication has succeeded in elevating the general standard of medical education throughout the country, and

WHEREAS, In recent years the Council has, under the direction of the House of Delegates, in consultation with the leaders in these respective fields, established certain standards for the recognition of qualified physicians specializing in pathology and radiology, and

WHEREAS, There is evidence of a widespread interest in the problems of medical specialism and a very general demand that means be found and standards formulated by which specialists may be known and recognized by their fellows in the profession, and that in this process of standardization there should be a national and uniform standard rather than a multiplicity of standards represented by the various state boards and state societies, and

WHEREAS, A number of special examining boards, the American Board of Ophthalmic Examinations, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology and the American Board of Dermatology and Syphilology, have been created to test the fitness and certify the qualifications of men engaged in, or desiring to engage in, special fields of practice, and such certificates have come to be regarded as establishing the skill and proficiency of those to whom they have been issued, and

WHEREAS, The Council may contribute to the usefulness of these special examining boards by granting some form of recognition to those which now, or hereafter, maintain satisfactory standards of organization and procedure; therefore be it

Resolved, That the Council on Medical Education and Hospitals is hereby authorized to express its approval of such special examining boards as conform to the standards of administration formulated by the Council; and be it further

Resolved, That the Board of Trustees of the American Medical Association be urged to use the machinery of the American Medical Association, including the publication of its Directory, in furthering the work of such examining boards as may be accredited by the Council.

IRVIN ABELL, Chairman.
E. D. PLASS.
W. H. ROSS.
S. P. MENGEL.
MATHER PFEIFFENBERGER.

On motions, duly seconded and carried, each section of the report was adopted. Dr. Abell moved that the report be adopted as a whole. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

Report of Reference Committee on Medical Economics

Dr. Arthur J. Bedell, Chairman, presented the following report:

Mr. Speaker and Members of the House of Delegates:

Your committee has carefully reviewed the report as published in the Handbook and concurs with the Bureau that "the problems that presented themselves were not all the result of current social and economic conditions but were, in some instances, the culmination of long standing and gradually developing practices. The schemes which were promulgated in the guise of cures for certain alleged faults in the administration of medical service represent a rapid extension of commercialism into the provision of medical services."

Your committee appreciates the special consideration that has been given to contract practice and agrees that this type of medical work is constantly changing. It recommends that the study of contract practice be continued, and the action of county societies in dealing with these problems be based on the recommendations of the Judicial Council:

By the term "contract practice," as applied to medicine, is meant the carrying out of an agreement between a physician or a group of physicians as principals or agents and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or for a fixed rate per capita.

Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are:

(1) When there is a solicitation of patients, directly or indirectly. (2) When there is underbidding to secure contracts. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of his employment make it impossible to render adequate service to his patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect, for good or ill, on the people as a whole.

Group hospitalization has been described and criticized in several issues of THE JOURNAL. Certain phases of some plans may have merit. The committee believes many contain features which are subversive to the best interest of the public, the medical profession and the hospital, and it condemns any plan which incorporates principles contrary to the remarks on contract practice. The committee recommends that the investigation of group hospitalization be continued and that the results of the studies be published in the Medical Economics department of THE JOURNAL.

The provisions of most workmen's compensation laws have been a constant source of irritation and annoyance to employees, employers and the medical profession. The committee approves of the report, prepared by the Bureau, on Medical Relations under Workmen's Compensation and recommends that it form the basis of state conferences.

The committee looks with favor on the medical economics course in medical colleges but urges that only competent instructors be employed. It recommends that the outline on medical economics be completed by the Bureau and submitted to all medical schools who desire it.

Group practice has received widespread attention. The articles in THE JOURNAL have been comprehensive in scope and the facts presented well correlated and so authentic that they should form the basis for any consideration of the problem and be read by all members of the Association. Those forming a group should be guided by the same principles regarding professional qualifications for practice, ethical relations to fellow practitioners and consideration for the economic position of those whom they serve as should guide the individual practitioner.

The committee notes the conferences on health and accident insurance practice and recommends the approval of the proposed short form health and accident claim proof blanks. It senses in this newly developed relation between our Association and this service group opportunities for improvement in our mutual contacts.

The committee commends the Bureau's activities, the field investigations of the director and his assistant, the number of special engagements that have been filled and particularly the published analyses. All of these efforts have been excellent and command attention and the committee recommends that they be continued.

It is with a feeling of pride and a growing sense of security based on the information gathered and disseminated by this Bureau that the committee recommends the report as a whole to the House of Delegates and expresses its approval of the work done by the director and his assistant.

ARTHUR J. BEDELL, Chairman.
WALTER F. DONALDSON.
C. W. WAGGONER.
JABEZ N. JACKSON.

The various sections of the report were adopted on motions of Dr. Bedell, duly seconded and carried, after discussion by Dr. Holman Taylor, Texas, and by the Secretary, after which the report of the committee was adopted as a whole.

Report of Reference Committee on Legislation and Public Relations

Dr. C. E. Mongan, Chairman, presented the following report:

1. With reference to the resolution introduced by Dr. Henry C. Macatee, delegate from the Medical Society of the District of Columbia, your committee recommends that the House of Delegates commend the action of the Medical Society of the

District of Columbia in informing its members of the medical and social implications of the Minority Report of the Committee on the Costs of Medical Care, in order to enable them better to support the principles and recommendations of that report. Your committee recommends that the House of Delegates commend this plan to the favorable consideration of other constituent associations.

Your committee believes that the organization of groups around hospitals or otherwise, supported by a voluntary or compulsory insurance or taxation, as recommended by the Majority Report of the Committee on Costs of Medical Care, would be inimical to the best interests of all concerned. It believes that such a plan, if compulsory, would encourage malingerers, would create a vast political machine with all its evils, would inevitably lead to state medicine, and would reduce our profession to the status of government employees with the present relation of physician and patient a thing of the past. Your committee believes the Minority Report and its recommendations offer the best solution of the existing situation and the only hope for a future stabilized medical practice. It recommends that the House of Delegates adopt the resolution proposed by Dr. Macatee, namely:

Resolved, That the House of Delegates of the American Medical Association endorse the Minority Report of the Committee on the Costs of Medical Care as expressive, in principle, of the collective opinion of the medical profession.

2. Your committee recommends that the House of Delegates approve the principle suggested in the resolution offered by Admiral C. E. Riggs, U. S. Navy, namely, that veterans suffering from service-connected disabilities be treated in the hospitals of the Army, Navy and Public Health Service, instead of in the hospitals of the Veterans' Administration, whenever it is to the best interests of the disabled veteran that he be so treated. Your committee recommends further that the Auxiliary Committee on Veterans' Affairs be authorized to do, under the direction of the Board of Trustees, whatever may be possible to carry this principle into effect, so far as is consistent with effective and economical government administration.

3. Your committee commends the work of the Committee on Legislative Activities and of its Auxiliary Committee on Veterans' Affairs. It recommends that the committee and its auxiliary committee use every effort to discover, through our constituent state associations and otherwise, the extent, if any, to which veterans who are denied medical and hospital care under the order recently issued by the President are in need of such care but unable to obtain it through local medical and hospital services in the communities in which they reside.

Your committee recommends that the House of Delegates adopt a resolution endorsing the policy of the President to reduce the cost of medical and surgical care of veterans to rational proportions, equitable both to the veteran and to the taxpayer, and pledging the Association to support that policy.

Your committee recommends that the attention of our several state associations be called to the recommendation of the Committee on Legislative Activities, urging action to prevent the practice of medicine by corporations. The illegality of the practice of medicine by corporations has been established by the decisions of a number of state supreme courts.

Your committee wishes to bring to the notice of the House of Delegates the comment by the Committee of Legislative Activities; namely, "We call attention to the excellent work that is being done by the Bureau of Legal Medicine and Legislation. Exact information is always available through this Bureau on legal aspects of the practice of medicine, and on legislative activities, both state and national. A brief résumé of the activities of this Bureau was published in the April number of the AMERICAN MEDICAL ASSOCIATION BULLETIN."

Your committee heartily approves this comment.

4. Your committee offers the following resolutions for adoption:

Resolved, That the American Medical Association commends the efforts of the President to preserve to all veterans suffering from service-connected disabilities all medical and hospital benefits necessary to their relief; and

Resolved, That the Association commends, too, the action of the President looking toward a reduction in medical and hospital benefits for veterans who are without service-connected disabilities, so that the cost of

the benefits provided, if any, will be reasonable, and equitable to the taxpayer as well as to the veteran; and further

Resolved, That copies of these resolutions be sent immediately to the President, the Vice President, the Speaker of the House of Representatives, the Director of the Budget and the Director of the Veterans' Administration.

5. Your committee concurs in the recommendation of the Board of Trustees contained in the report of the Bureau of Legal Medicine and Legislation that proper narcotic legislation by each of the several states be urged. Your committee recommends that the Association approve the draft of the proposed uniform state act concerning the control of narcotic drugs, prepared by the National Conference of Commissioners on Uniform State Laws and approved by the American Bar Association. This draft had its origin in the work of a committee of the American Medical Association, and in its preparation the Bureau of Legal Medicine and Legislation had an active part.

Your committee concurs in the recommendation that the House of Delegates approve the draft of a proposed uniform medical lien law, prepared by the Bureau of Legal Medicine and Legislation and submitted to the several state associations as a guide in the preparation of similar legislation.

CHARLES E. MONGAN, Chairman.

CHARLES J. WHALEN.

WELLS TEACHNOR, SR.

E. M. PALLETTE.

A. A. ROSS, Secretary.

On motions of Dr. Mongan, duly seconded and carried, the first three sections of the report were adopted.

Dr. Mongan moved that the resolutions contained in section 4 of the report be adopted. The motion was seconded by Dr. Charles H. Goodrich, New York, and carried, after the Secretary had been instructed to convey this message in the form of a telegram to the President.

Section 5 of the report was adopted on motion of Dr. Mongan, duly seconded and carried.

Dr. Mongan moved the adoption of the report as a whole. The motion was seconded by Dr. Mather Pfeifferberger, Illinois, and carried.

UNFINISHED BUSINESS

Preliminary Report on Hospitalization of the Mentally Ill in the United States

The Secretary presented the preliminary report of the Council on Medical Education and Hospitals on the Hospitalization of the Mentally Ill in the United States, which had been prepared by the Council with the assistance of an advisory committee in accordance with instructions received from the House of Delegates a year or two ago. The printed report was referred to the Reference Committee on Medical Education.

Cablegram from Secretary of British Medical Association

The Secretary read a cablegram received from the Secretary of the British Medical Association:

"Council of the British Medical Association regrets inability to appoint delegate, but sends fraternal greetings and best wishes for successful annual session. ANDERSON, Secretary, British Medical Association."

NEW BUSINESS

Resolutions on Use of Term "Economics of Medical Services"

Dr. Charles H. Goodrich, New York, presented the following resolutions, which were referred to the Reference Committee on Medical Economics:

WHEREAS, The term "medical economics" is not only misleading to the practitioner and the public but is also an incomplete expression of the economic cognations of medicine and surgery, and

WHEREAS, The public is inclined to infer that we are considering only the financial advantages to physicians because we use the term "medical economics" as an appellation for the Bureau or for committees, and

WHEREAS, The economics of medical service concerns all of the people and their community and governmental organizations; be it

Resolved, That in all of the literature, addresses and discussions of the American Medical Association the term "economics of medical services" replace the term "medical economics"; and be it

Resolved, That in naming the Bureau and special committees the unmodified term "Economics" be used (as "Bureau of Economics").

Resolution on Annual Observance of a State Health Day

Dr. Walter F. Donaldson, Pennsylvania, with the support of the entire Pennsylvania delegation, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The triumphs of preventive medicine over the diseases of childhood and early adult life have resulted in the development of enormously increased age groups at 50 years and beyond, and

WHEREAS, The prevention and treatment of diseases peculiar to the advanced age groups involves more on the individual medical practitioner than on health departments, and

WHEREAS, Public interest in the prevention of the degenerative diseases of the advanced age groups is woefully lacking; therefore be it

Resolved, That the House of Delegates of the American Medical Association urge on the constituent state associations the annual observance of a State Health Day, to be marked throughout each county of each state by the coordinating leadership of the component medical society.

Report of Public Health Committee of Medical Society of New Jersey

Dr. B. S. Pollak, New Jersey, presented a report of the Public Health Committee of the Medical Society of New Jersey, which was referred to the Reference Committee on Hygiene and Public Health.

Resolution on Advertising Foods Over the Radio

Dr. George Blumer, Connecticut, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The advertising of food of various types over the radio has been subject to extraordinary exaggerations and misleading statements likely to be harmful to the public health; therefore be it

Resolved, That the Board of Trustees, in its action opposing harmful advertising of drugs over the radio, include also a consideration of the control of the advertising of foods.

Remarks of Dr. T. C. Routley

The Speaker presented Dr. T. C. Routley, secretary of the Canadian Medical Association, who addressed the House as follows:

Mr. Chairman, Mr. President and Gentlemen:

Arriving here last night, I have been very busy from that hour until now. I can't help but think of the homely philosophy of the Chinaman. This Chinaman spent two years in this great country and then returned to his own home, and there obtaining a position on the docks, he was very much delighted one day to see a gentleman, obviously from the United States, standing on the dock looking at the longshoremen at work.

He said as he passed this American, "Come buy cargo?" The American shook his head no.

Then as he passed him a second time, he said, "Come, look and see?" The American shook his head no.

As he passed him the third time, he said, "Well, there only one more class. A man either come buy cargo, come, look and see, or he expect to die soon." (Laughter.)

I do want to say this, Mr. Chairman and gentlemen, that so far as your great country and this Association are concerned, I belong to the second class. I have come to look and see, and for ten years I have been doing this to my own great delight.

I bring you most cordial greetings from your colleagues in medicine in Canada. The president has desired me to say to you that you will all be welcome in Canada any time you care to come and honor us with a visit.

I am looking forward with great pleasure to renewing old friendships here and making some new ones. I do thank you most cordially for the kindly way in which you have received me.

Proposed Amendment to By-Laws

Dr. D. E. Sullivan, New Hampshire, presented the following amendment to chapter XI, section 2, of the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Amend chapter XI, section 2, by adding after the word *subscription* in the last line of paragraph 2, the following: Physicians who are employed by the United States government as full time physicians in service other than commissioned officers of the United States Army, U. S. Navy and U. S. Public Health Service, shall be Fellows while so employed by the government, provided such physicians subscribe to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The House recessed at 11:15 a. m. to reconvene at 1:15 p. m.

Tuesday Afternoon, June 13

The House of Delegates was called to order at 1:15 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, read the following supplementary report of the Reference Committee on Medical Education:

The preliminary report of the Council on Medical Education and Hospitals on the Hospitalization of the Mentally Ill in the United States shows a rather extensive study of 631 hospitals and institutions concerned in the care and treatment of the mentally ill. Your reference committee recommends the acceptance and filing of the Preliminary Report and that the House of Delegates express its appreciation and thanks both to the Council and to the Committee, which has worked so faithfully with it.

The seriousness and importance of the problem of the mental disordered and defectives, and the mental health of the country, is such that your reference committee recommends a continuation of the study under its present setup to the end that a complete report may be presented at the next annual session of the House of Delegates.

IRVIN ABELL, Chairman.
E. D. PLASS.
W. H. ROSS.
S. P. MENGEL.
MATHER PFEIFFENBERGER.

On motion of Dr. Abell, seconded by several members of the House, and carried, the report was adopted.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Holman Taylor, Chairman, presented the following report:

The following amendment to the By-Laws of the Association, introduced by Dr. D. E. Sullivan of New Hampshire, has been submitted to your committee:

Amend chapter XI, section 2, by adding after the word *subscription* in the last line of paragraph 2, the following: Physicians who are employed by the United States government as full time physicians in service other than commissioned officers of the United States Army, United States Navy and U. S. Public Health Service, shall be Fellows while so employed by the government, provided such physicians subscribe to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The evident purpose of the proposed amendment is to place the several medical services of the federal government not heretofore so recognized on a par with medical officers of the United States Army, United States Navy and United States Public Health Service. Your committee is of the opinion that the exceptions originally made in favor of the services mentioned were made because of certain exigencies of those services which do not obtain in the case of the services for which exemption is now being sought. It can see no good reason why physicians employed in these additional services may not become members of component county medical societies and assume their proportionate share of the burdens and responsibilities involved in the practice of medicine. Some exceptions might well be made in the interest of these physicians, were it practicable to make them, but that problem is not before your committee. Your committee recommends that the amendment do not pass.

Respectfully submitted.

HOLMAN TAYLOR, Chairman.
BEN R. McCLELLAN.
JAMES R. BLOSS.
E. L. SKIDMORE.
J. M. BIRNIE.

The report was adopted on motion of Dr. Taylor, seconded by several members of the House, and carried.

Report of Reference Committee on Rules and Order of Business

Dr. John F. Hagerty, Chairman, presented the following report:

At a later meeting of the Reference Committee on Rules and Order of Business, it was decided to withdraw the latter half of the resolution concerning election of delegates.

SCHOOL OF NURSING MILWAUKEE SESSION HARBORVIEW DIVISION.

JOUR. A. M. A.
JULY 1, 1933

The resolution as approved, now reads: The committee endorses the resolution that constituent associations elect their delegates far enough in advance so that the names of all delegates may be properly listed in the Handbook of the House of Delegates and requests that copies of this resolution be sent to the secretaries of all constituent associations.

JOHN F. HAGERTY, Chairman.

Dr. Hagerty moved that the report be adopted. The motion was seconded by Dr. William H. Myers, Georgia, and carried.

Executive Session—Tuesday Afternoon, June 13

The Speaker declared the House in executive session.

Report of Reference Committee on Legislation and Public Relations

Dr. Charles E. Mongan, Chairman, presented the following report:

With reference to the question submitted to your committee on the subject of the persecution of Jewish physicians in Germany, your committee begs leave to submit the following resolution:

Resolved, That the American Medical Association in annual session assembled condemns the persecution of any individual on account of race or religion by any state or under any flag.

CHARLES E. MONGAN, Chairman.

On motion of Dr. Mongan, seconded by Dr. William R. Molony, California, and carried, the resolution was adopted.

Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, after reading resolutions introduced by Dr. E. D. Plass, Iowa, and referred to the Reference Committee on Hygiene and Public Health, relating to birth control, presented the following report:

Your committee is of the opinion that it is proper and desirable that the House of Delegates should have in its possession full and accurate knowledge and information in regard to the subject of birth control, which may be used for guidance in such future action as it may wish to consider. The committee, therefore, recommends the adoption of the resolutions.

W. F. DRAPER, Chairman.

J. GURNEY TAYLOR.

GRANT C. MADILL.

J. NORMAN HENRY.

W. ALBERT COOK.

Dr. Draper moved that the report be adopted, and the motion was seconded by Dr. Walter Ralph Steiner, Connecticut.

After discussion by Dr. Edward M. Pallette, California, Dr. Pallette moved that the motion be laid on the table. The motion to table was seconded by Dr. D. E. Sullivan, New Hampshire, and several other members of the House, and carried by a vote of 66 in favor and 46 opposed.

Presentation of Dr. E. Starr Judd

The Speaker presented Dr. E. Starr Judd, a Past President, who greeted the members of the House.

Dr. Austin A. Hayden, Treasurer, stated for the Local Committee on Arrangements that there would be seats reserved and held for the members of the House of Delegates and the officers of the Association at the Opening General Meeting.

The House recessed at 1:50 p. m., to meet at 1 o'clock Thursday afternoon, June 15.

Third Meeting—Thursday Afternoon, June 15

The House of Delegates was called to order at 1 p. m. by the Speaker, Dr. F. C. Warnshuis, who announced that the House of Delegates would adjourn from executive session into regular session.

Report of Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that 162 delegates, who had presented proper credentials, were registered; and that the committee had received, just a few moments before, credentials in the form of a telegram from the president of the Mississippi

State Medical Association, stating that Dr. Paul Gamble was the regular alternate for his brother, Dr. H. A. Gamble.

Dr. Brook moved that Dr. Paul Gamble be seated. The motion was seconded by Dr. C. S. Gorsline, Michigan, and carried, and the Speaker announced that the House had adopted the report of the Reference Committee on Credentials.

On motion of Dr. H. H. Shoulders, Tennessee, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, the House dispensed with the reading of the minutes.

Report of Reference Committee on Medical Economics

Dr. Arthur J. Bedell, Chairman, presented the following report, which was adopted on motion of Dr. Bedell, duly seconded and carried:

Your committee has received the resolution introduced by Dr. Goodrich. In the judgment of the committee, this proposed change would institute so many alterations in the existing setup in component and constituent societies, as well as in this organization, that we recommend the continuance of the present term.

ARTHUR J. BEDELL, Chairman.

JABEZ N. JACKSON.

C. W. WAGGONER.

WALTER F. DONALDSON.

Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

1. Your committee has noted with interest and appreciation the report of the Public Health Committee of the Medical Society of New Jersey and recommends that this report be filed with the Bureau of Health and Public Instruction.

2. Your committee approves the inclusion of foods in the resolution already adopted in regard to the radio advertising of medicinal preparations and the like, and so recommends.

3. While your committee is in an entire accord with the desirability of creating public interest in the degenerative diseases of the advanced age group, it is of the opinion that in view of the endorsement previously recorded by the Association of the periodic health examination and because of the multiplicity of present-day observations already in effect the designation of a State Health Day as contemplated in the resolution would not be of particular advantage. Your committee therefore recommends that the resolution be not adopted.

W. F. DRAPER, Chairman.

J. GURNEY TAYLOR.

J. NORMAN HENRY.

GRANT C. MADILL.

The report of the reference committee was adopted section by section on motions by Dr. Draper, duly seconded and carried, and was adopted as a whole on motion of Dr. Draper, seconded by Dr. Mather Pfeifferberger, Illinois, and carried.

Resolutions on Psychiatric Service in the Administration of Criminal Justice

Dr. T. B. Throckmorton, Section on Nervous and Mental Diseases, presented the following resolutions, which were adopted on motion of Dr. Throckmorton, seconded by Dr. Felix J. Underwood, Mississippi, and carried:

WHEREAS, A knowledge of prevailing methods of providing psychiatric service for courts and other agencies having to do with crime and criminals is essential to the establishment of an adequate psychiatric service on an efficient basis;

Resolved, That the American Medical Association recognizes the desirability of a survey of prevailing methods by which psychiatric service is now provided for courts and other agencies dealing with crime and of the results of such methods; and further

Resolved, That the Association urges its constituent and component societies to devote at least one meeting annually, to which members of the local bar associations shall be invited, for the joint discussion of psychiatric service in the administration of criminal justice and the treatment of the offender.

Resolution on Prevention of Blindness by Examination of Pregnant Women

Dr. Edward Stieren, Section on Ophthalmology, presented the following resolution:

WHEREAS, Prenatal syphilis is responsible for interstitial keratitis and for many uveal and neural changes resulting in defective sight and blindness as well as deafness and other defects, and

WHEREAS, It has been found that above 3 per cent of the women attending prenatal clinics—in certain studies as high as 30 per cent—have shown a positive reaction to the Wassermann test, and it has been estimated on the basis of group studies that from 3 to 5 per cent of children taken in the mass have prenatal syphilis and that about half of these children without adequate treatment develop interstitial keratitis leading to defective vision if not blindness, and

WHEREAS, It has been authoritatively stated that prenatal syphilis can, without doubt, be prevented in the majority of cases, but only if there is complete cooperation between the patient and the various medical, social and educational agencies which enter into the diagnosis, the treatment and the care of the infected pregnant woman, and if treated adequately in the child before organic changes have occurred, it is curable without loss of sight, and

WHEREAS, This deplorable condition can be controlled only by combined efforts of the medical, the social and public health authorities; therefore be it

Resolved, That the Section on Ophthalmology requests the House of Delegates of the American Medical Association to appoint a committee to take this subject under advisement and to arrange methods by which cooperation may be secured through the combined efforts of the American Medical Association, the National Society for the Prevention of Blindness, the American Social Hygiene Association, the obstetric and ophthalmologic societies, the American Dermatological Association, public health organizations and such other organizations as can help, in order that blood examinations may be made of all pregnant women so that methods may be arranged for the treatment of all those infected with syphilis, thereby preventing the blindness and other tragedies which would otherwise inevitably follow.

Dr. Stieren moved that the resolution be adopted. The motion was seconded by Drs. Emily D. Barringer, New York, and G. Henry Mundt, Illinois, and carried, after Dr. Frank W. Gregor, Section on Dermatology and Syphilology, had stated that a similar, identical resolution was unanimously adopted by that section.

Message of Sympathy and Best Wishes to Dr. William H. Welch

Dr. Grant C. Madill, New York, moved that the Secretary be requested to extend by telegram a message of sympathy and best wishes for the recovery of Dr. William H. Welch, Baltimore, who is ill. The motion was seconded by several members of the House and carried.

Report of Reference Committee on Credentials

On request of the Speaker, the Secretary called the roll.

Dr. J. D. Brook, Chairman of the Reference Committee on Credentials, stated that neither Dr. Charles E. Kiely, delegate from Ohio, nor Dr. Louis H. Schriyer, his alternate, was in attendance but that Dr. G. F. Zinninger, alternate for Dr. John P. DeWitt, was present and desired to be seated for Dr. Kiely.

Dr. Mather Pfeifferberger, Illinois, moved that Dr. Zinninger be seated. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

ELECTION OF OFFICERS

'Election of President-Elect

On request of the Speaker, the Secretary read section 1, chapter IV of the By-Laws.

Dr. William H. Mayer, Pennsylvania, nominated, for President-Elect, Dr. Edward B. Heckel, Pittsburgh, and the nomination was seconded by Dr. Arthur J. Bedell, New York.

Dr. R. I. Lee, Massachusetts, nominated Dr. Harvey Cushing, Boston, and the nomination was seconded by Dr. Walter Ralph Steiner, Connecticut.

Dr. Fred Moore, Iowa, nominated Dr. Walter L. Bierring, Des Moines, Iowa. The nomination was seconded by Dr. G. Henry Mundt, Illinois, and Dr. T. B. Throckmorton, Section on Nervous and Mental Diseases.

The Speaker declared the nominations closed, and appointed as tellers Dr. G. Henry Mundt, Illinois; Dr. Frank P. Lytle, Pennsylvania; Dr. Thomas F. Thornton, Iowa; Dr. H. B. Everett, Tennessee, and Dr. Fred B. Clarke, California.

The Secretary, at the request of the Speaker, announced that 158 delegates had been recorded as present, and that 157 votes had been cast, of which Dr. E. B. Heckel, Pittsburgh, received 42; Dr. Harvey Cushing, Boston, 41, and Dr. Walter L. Bierring, Des Moines, Iowa, 74.

The Speaker declared that none of the candidates having received the required majority of votes, the lowest candidate

would be eliminated and it would be necessary to take a second ballot.

The Secretary announced as the result of the second ballot that 155 votes had been cast, of which Dr. E. B. Heckel, Pittsburgh, received 48 and Dr. Walter L. Bierring, Des Moines, Iowa, 107.

The Speaker declared Dr. Walter L. Bierring, having received the majority of votes cast, elected President-Elect of the American Medical Association.

On motion of Dr. William H. Mayer, Pennsylvania, duly seconded and carried, the election of Dr. Walter L. Bierring was made unanimous.

Election of Vice President

Dr. Joseph F. Smith, Wisconsin, nominated, for Vice President, Dr. John H. Musser, New Orleans. The nomination was seconded by Dr. Carl F. Moll, Michigan; Dr. Felix J. Underwood, Mississippi; Dr. H. W. E. Walther, Section on Urology, and Dr. J. Q. Graves, Louisiana.

Dr. William H. Seemann, Louisiana, moved that the nominations be closed. The motion was seconded by Dr. Lyell C. Kinney, California, and carried.

Dr. William H. Seemann, Louisiana, moved that the Secretary cast the ballot of the House for Dr. John H. Musser as Vice President. The motion was seconded by Dr. Felix J. Underwood, Mississippi, and carried, and the Secretary cast the unanimous ballot of the House for Dr. John H. Musser, New Orleans, for Vice President.

The Speaker declared Dr. John H. Musser elected as Vice President of the American Medical Association for the ensuing year.

Election of Secretary

Dr. Louis J. Hirschman, Michigan, nominated, for Secretary, Dr. Olin West, Chicago. Dr. C. S. Gorsline, Michigan, moved that nominations be closed, and the motion was seconded by Dr. Albert Soiland, Section on Radiology, and carried.

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. H. B. Everett, Tennessee, and carried, the Speaker cast the unanimous ballot of the House for Dr. Olin West as Secretary of the American Medical Association and declared Dr. West elected Secretary for the ensuing year.

Election of Treasurer

Dr. J. H. J. Upham, for the Board of Trustees, nominated, for the office of Treasurer, Dr. Herman L. Kretschmer, Chicago.

Dr. H. W. E. Walther, Section on Urology, moved that the nominations be closed. The motion was seconded by Dr. Crum Epler, Colorado, and carried.

Dr. Mather Pfeifferberger, Illinois, moved that the Secretary cast the ballot of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, and the Secretary cast the vote of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer of the Association.

The Speaker declared Dr. Herman L. Kretschmer elected as Treasurer of the American Medical Association for the ensuing year.

Election of Speaker of the House of Delegates

Dr. E. H. Cary, a Past President, took the chair and announced that the next order of business was the election of a Speaker of the House of Delegates.

Dr. J. D. Brook, Michigan, nominated, for Speaker of the House of Delegates, Dr. F. C. Warnshuis, Grand Rapids, Mich. The nomination was seconded by Drs. H. H. Shoulders and H. B. Everett, Tennessee, and by several other members of the House. Dr. Albert Soiland, Section on Radiology, moved that the nominations be closed. The motion was seconded by several members and carried.

On motion of Dr. Mather Pfeifferberger, Illinois, duly seconded and carried, the Secretary cast the unanimous vote of the House for Dr. F. C. Warnshuis to serve as Speaker of the House of Delegates, and Dr. Cary declared Dr. F. C. Warnshuis duly elected Speaker of the House of Delegates for the ensuing year.

Address of President-Elect Walter L. Bierring

The Speaker resumed the chair and introduced President-Elect Walter L. Bierring, who addressed the House as follows:

Mr. Speaker, Members of the House of Delegates:

This is one of the times when the words will not come forth that we would like to say. Somehow I feel that you have undertaken a good deal of responsibility in your action today.

As we reflect on the more than thirty years that this House of Delegates has been in organization there comes the thought that we are all servants and devotees of a common cause and we seem as one in our devotion to our great organization in which there seems to be but little place for individual distinction. When one thinks of what has been accomplished since you have been organized there is a common feeling of pride—the evolution of medical training that has been the marvel of the educational world, the supervision of pharmacologic products and therapeutic procedures, the unity of methods of medical practice, the conservative recognition of specialized forms of practice, the development of a scientific assembly and a marvelous exhibit of preeminent educational value, all expressed to the medical world through the medium of a great journal that has been under the fortunate guidance of a great editor for more than a quarter of a century, and much we owe to that Nestor of medical journalism, Dr. George H. Simmons, and likewise to that genius and leader in medical thought, the distinguished editor of today, Dr. Morris Fishbein, who has done so much for medical journalism in this new work and carried it far afield.

You have been an exhibit of rare judgment again in that you have considered these many forms in this changing order, social and economic, and still kept the middle road, and somehow you have instilled in all of us a confidence that in the future as in the past you are capable of keeping your own house in order.

I cannot tell you how much I am touched by your confidence, but if I may express myself it is only to give my fullest pledge of all that is in me for your service, and in all humility I thank you.

Election of Vice Speaker of the House of Delegates

Dr. Frederic E. Sondern, New York, nominated, for Vice Speaker of the House of Delegates, Dr. Nathan B. Van Etten, New York. The nomination was seconded by Dr. E. R. Mulford, New Jersey; Dr. William G. Ricker, Vermont, and Dr. J. Newton Hunsberger, Pennsylvania, after which on motion of Dr. B. F. Bailey, Nebraska, duly seconded and carried, the nominations were closed.

On motion of Dr. Arthur J. Bedell, New York, duly seconded and carried, the Secretary cast the vote of the House for Dr. N. B. Van Etten, New York, as Vice Speaker of the House of Delegates, and the Speaker declared Dr. Van Etten elected Vice Speaker of the House of Delegates for the ensuing year.

Election of Trustees

The Speaker declared the next order of business to be the election of a trustee for a term of five years to succeed Dr. J. H. Walsh, Chicago, whose term expired this year and who, according to the By-Laws, was not eligible for reelection.

Dr. Mather Pfeifferberger, Illinois, nominated Dr. Charles B. Reed, Chicago, and the nomination was seconded by Dr. Fred Moore, Iowa.

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, nominated Dr. Austin A. Hayden, Chicago, and the nomination was seconded by Dr. Samuel J. Kopetzky, New York.

The Speaker declared the nominations closed and requested the Secretary to announce the result of the ballot.

The Secretary stated that 154 votes had been cast, of which Dr. Charles B. Reed received 71 and Dr. Austin A. Hayden, 83.

The Speaker declared Dr. Austin A. Hayden, Chicago, having received the majority vote of the House, elected as a trustee of the American Medical Association for a term of five years.

On motion of Dr. C. B. Reed, Illinois, seconded by Dr. Samuel J. Kopetzky, New York, and carried, the election of Dr. Hayden was made unanimous.

The Speaker called for nominations for the office of Trustee to succeed Dr. A. R. Mitchell, deceased, whose term of office had expired.

Dr. W. F. Braasch, Minnesota, nominated Dr. C. B. Wright, Minneapolis. The nomination was seconded by Dr. H. H.

Shoulders, Tennessee; Dr. F. S. Crockett, Indiana, and Dr. William R. Malony, California.

Dr. McLain Rogers, Oklahoma, nominated Dr. W. Albert Cook, Oklahoma, and the nomination was seconded by Dr. Crum Epler, Colorado.

Dr. Jabez N. Jackson, Missouri, nominated Dr. Emmett P. North, St. Louis. The nomination was seconded by Dr. R. W. Fouts, Nebraska, and Dr. Warren F. Draper, Virginia.

The Speaker declared the nominations closed and the Secretary announced that 153 votes had been cast, of which Dr. C. B. Wright received 85; Dr. W. Albert Cook, 33, and Dr. Emmett P. North, 35.

The Speaker declared that Dr. C. B. Wright, having received the majority vote of the House of Delegates, had been elected as a member of the Board of Trustees for a term of five years.

On motion of Dr. McLain Rogers, Oklahoma, seconded by Dr. Jabez N. Jackson, Missouri, and carried, the election of Dr. Wright was made unanimous.

Nominations for Standing Committees

The Secretary, at the request of the President, read the following nominations of the President for Standing Committees:

Dr. J. H. O'Shea, Spokane, Wash., to succeed Dr. Frank W. Cregor on the Judicial Council for a term of five years.

Dr. James S. McLester, Birmingham, Ala., to succeed himself as a member of the Council on Medical Education and Hospitals for a term of seven years.

Dr. James E. Paullin, Atlanta, Ga., to succeed Dr. Roger S. Morris on the Council on Scientific Assembly for a term of five years.

On motion of Dr. Charles E. Humiston, Illinois, seconded by Dr. G. Henry Mundt, Illinois, and by Dr. H. B. Everett, Tennessee, and carried, the nominations were confirmed.

Election of Affiliate and Associate Fellows

The Secretary read nominations for Affiliate and Associate Fellowship:

APPLICANTS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Campbell, M. G., Atlanta, Ga.
Hammond, J. H., LaFayette, Ga.
Carson, Andros, Des Moines, Iowa.
Harris, F. R., Henderson, N. C.
Richards, B. U., Pawtucket, R. I.
Black, Thomas F., Providence, R. I.
Farrell, John T., Providence, R. I.
Munro, Walter L., Providence, R. I.
White, William R., Providence, R. I.
Burk, F. Edward, Wakefield, R. I.
Nay, W. Scott, Underhill, Vt.
Grim, A. S., St. Marys, W. Va.
Guttery, W. V., Middletown, Ill.
Black, H. R., Spartanburg, S. C.
Stribling, J. S., Seneca, S. C.
Crafts, Leo M., Minneapolis.
Reiter, Henry W., Shakopee, Minn.
Mott, John S., Kansas City, Mo.
Newlon, C. S., Kansas City, Mo.
Burrill, C. W., Kansas City, Mo.
Cordier, A. H., Kansas City, Mo.
Kanoky, J. P., Kansas City, Mo.
Crawford, H. S., Kansas City, Mo.
Pearson, Charles L., Newton, Mass.
Chisman, E. P. H., Boston.

APPLICATIONS FOR ASSOCIATE FELLOWSHIP FROM AMERICAN MEDICAL MISSIONARIES APPROVED BY THE JUDICIAL COUNCIL

Bowles, Herbert E., Tokyo, Japan.
Brines, Rolland James, Lowanho, Yencheng, China.
Brownsberger, Sidney B., Bobbili, Madras Presidency, India.
Gribble, Florence N., Yaloke, French Equatorial Africa.
Jensen, Jacob R., Monrovia, Liberia, West Africa.
Veatch, Everett P., Nana Kru, Liberia, West Africa.
Wagner, Grace St.C., Taiku, Shansi, China.

APPLICANTS FOR ASSOCIATE FELLOWSHIP NOMINATED BY THE SECTIONS INDICATED**SURGERY, GENERAL AND ABDOMINAL**

Brunschwig, Alexander, Chicago.

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

Asgis, A. J., New York.
Cronauer, Charles, Jr., Englewood, N. J.
Ericsson, J. Oliver, Norristown, Pa.
Gassen, Nathan M., New York.
Hayes, Louis V., New York.

PHARMACOLOGY AND THERAPEUTICS

Crittenden, Phoebe J., Washington, D. C.
Lamson, Paul D., Nashville, Tenn.

PATHOLOGY AND PHYSIOLOGY

Eyster, John A. E., Madison, Wis.
Koser, Stewart A., Chicago.
Long, Esmond R., Philadelphia.
Menkin, Valy, Boston.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Herring, Robert A., Washington, D. C.
Soper, George A., Great Neck, N. Y.

Dr. Arthur J. Bedell, New York, moved that the applicants listed be elected to Affiliate or Associate Fellowship in the American Medical Association, as indicated. The motion was seconded by Dr. Mather Pfeifferberger, Illinois, and carried, and the Speaker declared the applicants elected.

Nomination for Honorary Fellowship

Dr. Arthur H. Curtis, Section on Obstetrics, Gynecology and Abdominal Surgery, nominated for Honorary Fellowship Dr. Reuben Peterson of Ann Arbor, Mich. The nomination was referred to the Council on Scientific Assembly, after discussion by the Speaker; Dr. Holman Taylor, Texas; the Secretary; Dr. Louis J. Hirschman, Michigan, and Dr. Curtis.

Place of the 1934 Annual Session

The Speaker announced that the next order of business was the selection of the place of the 1934 annual session and requested the Board of Trustees to present nominations.

Dr. J. H. J. Upham, for the Board of Trustees, stated that consideration had been given by the Board of Trustees to the facilities of the cities from which invitations had been received for the 1934 meeting of the Association; i. e., Long Beach, Calif.; Atlantic City, N. J.; Baltimore, Md.; Pasadena, Calif.; Cleveland, Ohio, and Washington, D. C., and that the Board had to report that Atlantic City and Cleveland have the most satisfactory facilities for accommodating a meeting of the Association.

Dr. Henry C. Macatee, District of Columbia, nominated Washington, D. C., and extended an invitation from that city. Dr. Walt P. Conaway, New Jersey, extended an invitation from Atlantic City, and Dr. C. W. Stone, Ohio, an invitation from Cleveland.

The Speaker declared the nominations closed, and the Secretary announced that 144 votes had been cast, of which Atlantic City had received 33; Cleveland, 96; Washington, 14, and Milwaukee, 1.

The Speaker declared Cleveland the place for the next annual session of the American Medical Association, as it had received a majority of the votes cast.

Report of Council on Scientific Assembly

Dr. John E. Lane, Chairman, stated that the name of Dr. Reuben Peterson had been submitted to the Council for approval for election as an Honorary Fellow. The Council recommended the election.

Dr. Louis J. Hirschman, Michigan, moved that the recommendation of the Council be adopted. The motion was seconded and carried.

Dr. Arthur H. Curtis, Section on Obstetrics, Gynecology and Abdominal Surgery, moved that Dr. Reuben Peterson be elected as an Honorary Fellow. The motion was seconded by Dr. Louis J. Hirschman, Michigan, and by Dr. E. D. Plass, Iowa, and carried, and the Speaker declared Dr. Peterson so elected.

Unfinished Business

Dr. J. Newton Hunsberger, Pennsylvania, moved that a vote of thanks be extended to the Medical Society of Milwaukee County, the State Medical Society of Wisconsin, the Auxiliary, the press, and the citizens of Milwaukee for their hospitality during the session, adding that they had given very delightful weather also. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried unanimously.

The House of Delegates adjourned sine die at 3:40 p. m.

REGISTRATION AT MILWAUKEE

The total registration at the Milwaukee session was 4,601. Below are given two summaries—one by sections and one by states:

Registration by Sections

| | |
|---|-------|
| Practice of Medicine..... | 1,353 |
| Surgery, General and Abdominal..... | 786 |
| Obstetrics, Gynecology and Abdominal Surgery..... | 329 |
| Ophthalmology..... | 274 |
| Laryngology, Otology and Rhinology..... | 246 |
| Pediatrics..... | 315 |
| Pharmacology and Therapeutics..... | 32 |
| Pathology and Physiology..... | 127 |
| Nervous and Mental Diseases..... | 188 |
| Dermatology and Syphilology..... | 150 |
| Preventive and Industrial Medicine and Public Health..... | 132 |
| Urology..... | 143 |
| Orthopedic Surgery..... | 118 |
| Gastro-Enterology and Proctology..... | 132 |
| Radiology..... | 133 |
| Miscellaneous Topics, Sessions on Anesthesia..... | 14 |
| More than one section and no section..... | 129 |

4,601

Registration by States

| | | | |
|---------------------------|-------|---------------------|-------|
| Alabama..... | 25 | New Hampshire..... | 3 |
| Arizona..... | 5 | New Jersey..... | 23 |
| Arkansas..... | 16 | New Mexico..... | 7 |
| California..... | 124 | New York..... | 190 |
| Colorado..... | 43 | North Carolina..... | 7 |
| Connecticut..... | 22 | North Dakota..... | 18 |
| Delaware..... | 3 | Ohio..... | 216 |
| District of Columbia..... | 42 | Oklahoma..... | 33 |
| Florida..... | 22 | Oregon..... | 12 |
| Georgia..... | 32 | Pennsylvania..... | 173 |
| Idaho..... | 7 | Rhode Island..... | 10 |
| Illinois..... | 1,050 | South Carolina..... | 11 |
| Indiana..... | 132 | South Dakota..... | 14 |
| Iowa..... | 110 | Tennessee..... | 38 |
| Kansas..... | 33 | Texas..... | 71 |
| Kentucky..... | 31 | Utah..... | 14 |
| Louisiana..... | 29 | Vermont..... | 3 |
| Maine..... | 2 | Virginia..... | 28 |
| Maryland..... | 35 | Washington..... | 20 |
| Massachusetts..... | 84 | West Virginia..... | 14 |
| Michigan..... | 212 | Wisconsin..... | 1,143 |
| Minnesota..... | 199 | Wyoming..... | 7 |
| Mississippi..... | 58 | Miscellaneous..... | 47 |
| Missouri..... | 126 | | |
| Montana..... | 10 | | |
| Nebraska..... | 47 | | |
| | | Total..... | 4,601 |

(To be continued)

Association News

ABSTRACT OF MINUTES OF MEETINGS
OF BOARD OF TRUSTEES HELD
JUNE 11-16, 1933

The first meeting of the Board of Trustees during the week of the Milwaukee Session of the Association was held at Dr. Rock Sleyster's home at Wauwatosa, Wis., on Sunday, June 11; other meetings were held at the Schroeder Hotel in Milwaukee on ensuing days during the session.

A resolution expressing the Board's appreciation of the loyal, constructive and understanding efforts of Dr. Albert R. Mitchell in behalf of the physicians of the United States and its sense of personal loss in his death was adopted for presentation to the House of Delegates, and a personal communication was prepared and sent to his widow.

ADDITIONAL ASSISTANT FOR COUNCIL ON
PHARMACY AND CHEMISTRY

The employment of an additional assistant for the Council on Pharmacy and Chemistry was authorized, with a view to having more of the preliminary work of the Council handled in the headquarters office and thus relieving the members of the Council.

ELECTIONS

Prof. E. O. Jordan of the University of Chicago was elected to membership on the Committee on Foods. Dr. A. U. Desjardins was elected to succeed himself, and Dr. Yandell Henderson to succeed Dr. H. B. Williams on the Council on

Physical Therapy. Dr. Stephen W. Ranson of Chicago was elected to membership on the editorial board of the *Archives of Neurology and Psychiatry*. Dr. E. H. Cary, F. S. Crockett and C. B. Wright were reappointed to serve as the Committee on Legislative Activities, the first mentioned to act as chairman, and the selection of an auxiliary committee was postponed until a later meeting.

NEW EDITION OF AMERICAN MEDICAL DIRECTORY

The publication of a Thirteenth Edition of the American Medical Directory was authorized and the action of the Board in this respect was reported to the House of Delegates.

DATES OF SECRETARIES' CONFERENCE AND OF FALL MEETING OF BOARD OF TRUSTEES

Since, so far as could be ascertained from the list of meetings published in THE JOURNAL, no meetings of state societies have been scheduled for the week of September 17-23, the Board set the date of its fall meeting as September 21-22 and that of the meeting of Secretaries of State Societies, September 22-23.

RESOLUTION FROM STATE MEDICAL SOCIETY OF WISCONSIN

A resolution from the State Medical Society of Wisconsin, deprecating the declaration of opinions with regard to social, legislative and economic relations of medical practice, except through the approved channels of the American Medical Association, was approved and referred to the House of Delegates.

RESOLUTIONS FROM HOUSE OF DELEGATES

The Board gave careful consideration to resolutions referred to it by the House of Delegates and reported to the latter body the result of its deliberations on these matters.

REORGANIZATION OF THE BOARD OF TRUSTEES

At its last meeting, on Thursday, the Board of Trustees reorganized, and the following officers and committees were appointed: Dr. J. H. J. Upham, chairman; Dr. Rock Sleyster, vice chairman; Dr. Austin A. Hayden, secretary. Executive and Finance Committee: Drs. Rock Sleyster (chairman), D. Chester Brown and Austin A. Hayden. Committee on Scientific Exhibit: Drs. D. Chester Brown, Allen Bunce and Arthur W. Booth.

ADJOURNMENT IN MEMORY AND HONOR OF DR. ALBERT R. MITCHELL

Other matters were given due consideration, and the last meeting of the Board was adjourned in memory and honor of its recently departed chairman, Dr. Albert R. Mitchell.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

- July 4. Holiday. No broadcast.
- July 6. Gun Powder.

There is also a fifteen minute talk, sponsored by the Association, on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- July 8. Rheumatic Fever.

Nuclei of Disease in the Air.—We may esteem ourselves fortunate that the detection of non-radioactive substances is less sensitive than those that have been described. If we could see how many nuclei of dirt, dust, and disease are contained in the air we constantly inhale, we might be terrified and hardly dare to breathe. Nature in her wisdom has arranged matters so that in the course from the ponderable to the imponderable the limits of visibility coincide approximately with the limits of weighability. Let us be thankful that it does not reach down to the individual atoms.—Hahn, Otto: From the Ponderable to the Imponderable, *Science* 77:403 (April 28) 1933.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Appointments to State Board.—Dr. John H. Patterson, Phoenix, was recently elected secretary of the Arizona State Board of Medical Examiners, succeeding Dr. Benjamin M. Berger, Phoenix. Other appointments include Drs. Ira E. Huffman, Tucson, Clarence W. Adams, Globe, and Charles C. Bradbury, D.O., Phoenix, for terms of two years. Dr. William G. Schultz, Tucson, was reappointed a member.

ARKANSAS

Consent for Necropsy.—A verdict in favor of Dr. Harvey S. Thatcher, head of the department of pathology, School of Medicine, University of Arkansas, and his assistant, Dr. Albert F. DeGroat, was rendered by the jury in the case recently brought against them on account of a necropsy done by Dr. DeGroat. The mother of the child on whom the necropsy was performed signed a permit for it. The father was present when she did so, but he did not sign the permit. There were the usual allegations in the suit as to removal of parts of the body, and a necropsy without consent. To guard against similar suits, the rule has been adopted now of requiring both the father and the mother of a deceased child to sign a permit for a necropsy, so that the pathologists may not be made the victims of differences of opinions and desires between the parents, who, under the laws of Arkansas, are joint guardians.

CALIFORNIA

Lectures by Dr. Rosenau.—Dr. Milton J. Rosenau, Charles Wilder professor of preventive medicine and hygiene, Harvard University Medical School, Boston, gave two lectures, June 21-22, before the San Diego Academy of Medicine. His subjects were "Epidemiology and Etiology of Common Colds and Influenza" and "Milk-Borne Diseases and Their Prevention."

Memorial to Physicians.—One hundred and sixty-nine bound volumes and 159 unbound periodicals ranging in date from 1800 to 1898 were recently given to the Barlow Medical Library as a memorial in honor of Drs. Addison P. and Philip K. Strong. Mrs. Philip K. Strong and Mr. Edward A. Strong were the donors. One of the most interesting collections was the *Philadelphia Journal of Medicine*, 1820-1827. The Barlow Medical Library was presented to the Los Angeles County Medical Association last year.

Society News.—Dr. William M. Happ, Los Angeles, addressed the San Diego County Medical Society, June 13, on "Pyuria in Children: A Consideration of Its Causes and Treatment."—Dr. Ludwig A. Emge addressed the San Francisco Pathological Society, May 8, on "Behavior of a Transplantable Benign Mammary Tumor of a White Rat."—Dr. Herbert F. True, Sacramento, was recently installed as president of the Northern California Public Health Association. Leon B. Reynolds, D.Sc., professor of hydraulic and sanitary engineering, Stanford University, was made president-elect, and Dr. Walter H. Brown, Palo Alto, secretary.—Dr. George Dock, Pasadena, discussed "Historical Medicine, with Special Reference to the Discovery of Percussion," before the Hollywood Academy of Medicine and the Los Angeles County Medical Association, June 15.

COLORADO

Society News.—Dr. Vardry A. Hutton, Florence, addressed the Fremont County Medical Society at Florence, May 22, on "Coronary Occlusion."—Dr. Glen E. Cheley, Denver, spoke before the Larimer County Medical Society, May 3, on "Embryology and Surgery of Clefts of the Lip and Palate."—Speakers before the Pueblo County Medical Society in May were Leonard T. Walsh, D.D.S., on "Problems in Orthodontia"; Drs. Ralph S. Johnston, La Junta, "Embolism," and George W. Hawley, Bridgeport, Conn., "New Methods of Treating Fractures."

New Officers of State Board.—Dr. Paul J. Connor, Denver, was recently elected president of the Colorado State Board of Health; Dr. William P. Gasser, Loveland, vice president, and Samuel R. McKelvey, Denver, reelected secretary. Dr. McKelvey will become executive officer of the division

of public health created as a part of the state executive department in a reorganization of the state government by the last legislature. The new division combines all the functions of the state board of health, the meat and slaughter plant inspectors and the state chemist under Dr. McKelvey's supervision, subject to control by the state board of health.

Immunization Program for Denver.—Recommendations framed by the committee on relations with public schools of the Medical Society of the City and County of Denver have been adopted by welfare agencies as the basis of a program of immunization for the city and county. Provision was made for vaccination of all new-born infants occupying free beds at the Denver General and Colorado General hospitals and immunization against both smallpox and diphtheria for all infants admitted to welfare stations. Free immunization of school children in poor districts and of poor children in other districts if certified by the school nurse was recommended. Among other families, parents are to be urged to have their children immunized by the family physician. The committee also recommended that the society sponsor a campaign of education among physicians to prepare them for the work of immunization, including demonstrations of the technique of giving toxoid, the Schick test and smallpox vaccination. In addition, literature on immunization, prepared jointly by the society, the city health department and the school health authorities, will be distributed among parents' organizations, especially if a case of smallpox or diphtheria appears in the schools.

DISTRICT OF COLUMBIA

House Bill to Prevent Blindness.—H. R. 5812, introduced by Representative Watson, Pennsylvania, provides for the prevention of blindness in infants born in the District of Columbia.

Personal.—Wilbur F. Potter, Ph.D., assistant professor of physiology and pharmacology, Medical Department of the University of Georgia, Augusta, has been appointed to a similar position at Georgetown University School of Medicine, Washington. —Dr. A. Ortiz Tirado, orthopedic surgeon and director of the Morelos Hospital, Mexico City, was recently the guest of the Washington Chapter of the Pan American Medical Association and the International Medical Club. Dr. Ortiz Tirado, who also sings, gave a program featuring Mexican songs at the Pan American Union in Washington, June 7.

GEORGIA

Medical School to Be Continued.—A resolution recently adopted by the regents of the University System of Georgia authorizes the continuation of the medical school at Augusta. The closing of the school, effective July 1, had been ordered under a resolution adopted by the regents, April 15. It is understood that the regents had under consideration a plan for consolidating the medical school with the university at Athens.

Society News.—Dr. Joseph Yampolsky presented a paper on treatment of congenital syphilis before the Fulton County Medical Society, Atlanta, May 4. Dr. David Henry Poer discussed thyroid surgery at a meeting, June 15. —The Atlanta Tuberculosis Association observed its twenty-sixth anniversary, April 22. —Dr. John William Shearouse, Savannah, was installed as president of the Georgia Urological Association at a meeting, May 11. Dr. Walter B. Emery, Atlanta, was named president-elect. Dr. Major F. Fowler, Atlanta, was elected secretary, and Savannah was selected for the place of the next meeting in October. Dr. Ernest Corn, Macon, is the retiring president. —At a meeting of the Fifth District Medical Society in Atlanta, speakers included Drs. John D. Martin, Jr., Atlanta, on "Penetrating Wounds of the Abdomen"; Harold M. Bowcock, Atlanta, "Correction of Obesity by Low Calory Diet," and Virgil P. W. Sydenstricker, Augusta, "Dermatomyositis."

ILLINOIS

Society News.—Dr. Edward S. Judd, Rochester, Minn., was the principal speaker before the recent annual meeting of the Lee County Medical Society, on cholecystitis. —Dr. Fred M. F. Meixner, Peoria, addressed the La Salle County Medical Society at Harding, June 7, on "Clinical Aspects of Childhood Tuberculosis."

Chicago

Society News.—Dr. Charles H. Phifer, professor of surgery, University of Illinois College of Medicine, was chosen president-elect of the Chicago Medical Society at its meeting, June 20, and Dr. Thomas P. Foley was elected secretary.

These officers will assume their offices in 1934. Dr. Austin A. Hayden was installed as president of the society at the annual dinner, June 7.

Miller Denied a Rehearing.—The state supreme court refused a rehearing, June 9, to W. H. H. Miller, former director of the state department of education and registration, according to the *Chicago Tribune*, June 10. Miller had been convicted of operating a diploma mill and had served his sentence and paid his fine, but the appeal was an attempt to clear his record (*THE JOURNAL*, May 20, p. 1612).

Personal.—Dr. Philip H. Kreuscher has been appointed medical director of the Industrial Commission of Illinois. It was also announced that the organization of a medical department is planned, to facilitate impartial administration of the workmen's compensation act. —Dr. Loyal Davis was the recipient of an honorary degree of doctor of science from Knox College, Galesburg, Ill., at its annual commencement.

KENTUCKY

Personal.—Dr. Nathaniel A. Mercer has again assumed the directorship of the Adair County health department after a year's study at Harvard University. Dr. Gracie R. Rowntree, who served in Dr. Mercer's absence, has been appointed health officer of Green County, succeeding Dr. Milton W. Williamson. —Citizens of Germantown entertained Dr. Joseph C. Browning at a dinner, March 23, in honor of his fiftieth anniversary in the practice of medicine and his seventy-eighth birthday.

Society News.—Dr. Samuel B. Marks, Lexington, was elected president of the Eye and Ear Section of the Kentucky State Medical Association at its annual meeting in Paducah, May 15. Dr. Lee Wallace Dean, St. Louis, was the guest speaker of the section, which holds its meetings separately from those of the state society. —A symposium on the pancreas was presented before the Jefferson County Medical Society, Louisville, June 5, by Drs. Aura J. Miller, Irvin Abell and Virgil E. Simpson. Dr. Fred W. Rankin, Lexington, addressed the society, June 19, on "The Megacolon, with Special Reference to Sympathectomy Treatment." —Dr. Louis Frank, Louisville, among others, addressed the Licking Valley Medical Society, June 8, at Carlisle, on cancer.

MARYLAND

Portrait Unveiled.—At a memorial meeting, May 27, in the War Memorial Building, Baltimore, a portrait of the late Dr. Charles Hampson Jones, city commissioner of health, was unveiled. Speakers included Mayor Jackson of Baltimore; Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service; Dr. Thomas S. Cullen, representing the Medical and Chirurgical Faculty of Maryland and the state board of health, and Dr. Huntington Williams, commissioner of health. The portrait was unveiled by Dr. Jones's daughter, Mrs. A. L. Rothel. It will be placed in the offices of the city health department. Dr. Jones was associated with the department from 1896 until his death in 1932, the last thirteen years as health commissioner.

MASSACHUSETTS

State Medical Election.—Dr. William H. Robey, Boston, was named president of the Massachusetts Medical Society at its meeting, June 6; Dr. Philemon E. Truesdale, Fall River, vice president, and Dr. Walter L. Burrage, Brookline, secretary, reelected. The next annual session will be held at Worcester, June 11-13, 1934.

Hospital News.—A new unit of the Boston State Hospital, which was to have opened, May 1, will be used as a training center for medical students from Boston University and Tufts College, it is reported. The building will accommodate 150 patients. To project a new method of approach in the treatment of mental disorders, the unit has been constructed with no suggestion of restraint. —Cancer patients will be accepted at the Palmer Memorial Hospital, Boston, in accordance with a recently adopted policy. Although not operated on a purely charitable basis, the institution will no longer be a private hospital.

Dr. Cushing Accepts Professorship at Yale.—Dr. Harvey Cushing, Boston, has been appointed Sterling professor of neurology at Yale University School of Medicine, New Haven, where he will devote himself to literary activities and research to the exclusion of clinical work. Dr. Cushing's laboratories will be in the Sterling Hall of Medicine, in association with the experimental laboratories of preclinical departments of the medical school. He will be the first incumbent of this professorship, which was only recently established, under a \$300,000.

bequest of the late John W. Sterling. It is expected that he will take up his new work this autumn. Dr. Cushing retired from Harvard University Medical School, Sept. 1, 1932, as Moseley professor of surgery, a position he had held since 1912. At this time he also resigned as surgeon-in-chief of Peter Bent Brigham Hospital. Dr. Cushing was associate professor of surgery at Johns Hopkins University School of Medicine, Baltimore, from 1902 to 1912, when he became affiliated with Harvard. Many honorary degrees from medical institutions have been conferred on Dr. Cushing. In 1922 he was awarded the Charles C. Mickle Fellowship of \$1,000 by the University of Toronto Faculty of Medicine. This prize is given to the member of the profession anywhere in the world considered by the faculty to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science. In 1923 he was awarded the Distinguished Service Medal. During the World War he was a colonel in the medical corps, and director of U. S. Base Hospital number 5 (Harvard base hospital unit). He received the Lister Medal of the Royal College of Surgeons in 1930. He was president of the American College of Surgeons and the American Neurological Association in 1923, and of the American Surgical Association in 1927. He was the recipient of the Cameron Prize of the University of Edinburgh in 1924. Dr. Cushing's "The Life of Sir William Osler," in 1925, won the Pulitzer Prize for biography.

MICHIGAN

Personal.—Dr. John E. Handy, Caro, was presented with a traveling bag by the Tuscola County Medical Society, May 18, in honor of his having been appointed to the state board of registration in medicine and for his service to the community; he has been a resident of Tuscola County since 1889 and of Caro since 1906. —Dr. Edwin R. Vanderslice succeeded Dr. S. Rowland Hill as health officer of Lansing, May 1; the latter held the position for twelve years.

Memorial to Physician.—A bronze tablet was placed in the Hillsdale Hospital, Hillsdale, May 9, as a memorial to the late Dr. Walter Hume Sawyer, president of the state medical society in 1913, and at one time a member of the state board of registration and education. President Ruthven of the university made the presentation, and Dr. J. Milton Robb, president of the state medical society, represented the medical profession. As a tribute to Dr. Sawyer, the mayor ordered business houses closed for an hour during the afternoon ceremony.

Society News.—Dr. Frederick A. Collier, Ann Arbor, addressed the Oakland County Medical Society, May 18, on "Treatment of Advanced Acute Appendicitis." This was a joint session with the staff of St. Joseph's Mercy Hospital, Pontiac. —At the annual clinic and banquet of the Alumni Association of Detroit College of Medicine and Surgery, June 5, clinics were conducted by Drs. George W. Crile, Cleveland, and Walter C. Alvarez, Rochester, Minn. Dr. Crile was the speaker at the banquet on "Orthogenesis and the Power and Infirmities of Man." —Dr. Adolph E. Voegelin spoke on "Clinical Uses of Oxygen" before the East Side Medical Society, Detroit, April 27. —Dr. Alexander W. Blain was installed as president of the Wayne County Medical Society at its recent annual meeting, and Dr. William J. Cassidy was chosen president-elect. —Dr. Moses Cooperstock, Marquette, addressed the Dickinson-Iron County Medical Society at Iron Mountain, May 12, on "Acute Rheumatic Fever in Children." —Speakers before the Grand Traverse-Leelanau County Medical Society in Traverse City, May 1, included Dr. Paul C. Williams, Ann Arbor, on "Sciatica and Low Back Pain." —At a meeting of the St. Clair County Medical Society in Port Huron, May 16, the speakers included Drs. Clarke M. McColl and John G. Mateer, Detroit, on "Chronic Arthritis: Causes and Treatment" and "Differential Diagnosis of Jaundiced Patients," respectively. —The Kalamazoo Academy of Medicine was addressed, June 20, by John H. Muyskens, professor of speech and general linguistics, University of Michigan, Ann Arbor, on "The Tongues of Men."

MINNESOTA

State Medical Election.—Dr. Francis J. Savage, St. Paul, was elected president of the Minnesota State Medical Association at its recent annual meeting, to serve from January 1. Dr. Edward A. Meyerding, St. Paul, was reelected secretary. Duluth was designated as the place for the next annual meeting in 1934.

Personal.—Dr. Albert Fritsche, New Ulm, has been appointed a member of the state board of medical examiners, succeeding Dr. George B. Weiser. —Dr. William J. Mayo,

Rochester, has left for Scotland, where he will receive the honorary degree of doctor of laws from the University of Aberdeen, the Chicago *Tribune* reported, June 22.

MISSOURI

Tuberculosis Survey.—According to an announcement, May 28, the president of the Missouri Tuberculosis Association was authorized at a conference held in connection with the recent meeting of the Missouri State Medical Association to name a committee to make a survey of tuberculosis control problems in Missouri. The following physicians are on the committee:

Warren L. Allee, Eldon, president of the state medical association.
Elmer T. McLaugh, Jefferson City, state health commissioner.
Stephen A. Newman, superintendent, Missouri State Sanatorium, Mount Vernon.
Hyman I. Spector, senior instructor in internal medicine, St. Louis University School of Medicine.
Jacob J. Singer, associate professor of clinical medicine, Washington University School of Medicine.
Newell R. Ziegler, associate professor of bacteriology and preventive medicine, University of Missouri School of Medicine, Columbia.
John W. Williams, Jr., Springfield, director, Greene County Health Unit.
George H. Hoxie, president, Missouri Tuberculosis Association, Kansas City.

Society News.—Dr. Oscar W. Davidson, Kansas City, was elected president of the Kansas City Urological Society recently. —A joint meeting of the Buchanan County Medical Society and the St. Joseph Clinical Society was addressed, April 19, in St. Joseph, by Drs. John R. Caulk, St. Louis, on "The Cautey Punch Operation for the Removal of Prostatic Obstruction," and Philip C. Jeans, Iowa City, "Certain Practical Aspects of Nutrition in Childhood." —Dr. Quitman U. Newell, St. Louis, spoke on "Diagnosis and Treatment of Carcinoma of the Uterus" before a recent meeting of the Cape Girardeau County Medical Society in Cape Girardeau. —At a meeting of the Clay County Medical Society in Liberty, April 27, Dr. Charles C. Conover, Kansas City, spoke on "Pathology and Therapeutics of the Diseased Heart." —Speakers before the Nodaway County Medical Society in Maryville, April 14, were Drs. Otto Jason Dixon and Morris H. Clark, Kansas City, on "Management of Acute Infections of the Head and Neck" and "Relationship of General Diseases to Diseases of the Eye," respectively.

MONTANA

State Medical Meeting at Anaconda, July 12-13.—The fifty-fifth annual meeting of the Medical Association of Montana will be held at the Montana Hotel in Anaconda, July 12-13, under the presidency of Dr. John R. E. Sievers, Butte. Dr. William E. Long, Anaconda, president, Mount Powell Medical Society, will deliver the address of welcome, and Dr. John A. Evert, Glendive, will respond for the state association. The following will participate in the scientific program:

Dr. Howard C. Naffziger, San Francisco, Encephalography.
Mr. Basil Edwards, Salt Lake City, Utah, Medical Economics.
Dr. Clyde H. Fredrickson, Great Falls, Jaundice as a Complication of Biliary Disease.
Dr. Olin West, Secretary and General Manager, American Medical Association, Chicago, The Future of Medical Practice.
Dr. John de J. Pemberton, Rochester, Minn., Rational Treatment of Toxic Goiter.
Dr. James Tate Mason, Seattle, Problems of Cholecystitis.
Dr. George W. Swift, Seattle, Medical Economics.
Dr. John H. Bridenbaugh, Billings, Radiation Treatment of Carcinoma of the Skin.
Dr. James C. Shields, Butte, Treatment of Compound Fractures.

Dr. Robert C. Coffey, Portland, Ore., will be the banquet speaker on "My European Trip." The Health Association of Montana will meet, July 10-11, and the Montana Academy of Oto-Ophthalmology, July 11. Both will convene in the Montana Hotel.

NEW HAMPSHIRE

Hospital News.—The Christina H. Parker House, a maternity building recently completed at Elliott Hospital, Manchester, at a cost of \$85,000, was opened, April 18. Mrs. Christina H. Parker bequeathed \$50,000 for the building.

Medals to Veteran Members.—Gold medals emblematic of fifty years' membership in the New Hampshire Medical Society were presented at the annual meeting in Manchester, May 15, to Drs. Charles A. Weaver and Charles F. Flanders, Manchester, and Charles B. Drake, West Lebanon. The following, who have completed fifty years of medical practice, were congratulated by the society: Drs. Alpha H. Harriman, Laconia; Nathaniel F. Cheever, Greenfield; William H. Leith, Lancaster; William Hale, Gloucester, Mass.; Charles B. Drake, West Lebanon, and Joseph Theriault, Montreal.

NEW JERSEY

State Medical Election.—Dr. Frederic J. Quigley, Union City, was inducted into office as president of the Medical Society of New Jersey at its annual meeting in June. Dr. Lancelot Ely, Somerville, was chosen vice president and Dr. John B. Morrison, Newark, reelected secretary. The next annual session will be held in Atlantic City in June, 1934.

NEW YORK

Course for Health Officers.—A week's residence course for local health officers was held at Albany Medical College, June 12-17, in cooperation with the state department of health. Among subjects discussed were field epidemiologic work, diagnostic criteria in tuberculosis, typhoid carrier control, milk control, deaths in childbirth and venereal disease. Clinics were presented by Drs. Lemuel Whittington Gorham, on heart disease; Arthur W. Elting, industrial surgery; Rudolph Ruedemann, Jr., syphilis, and Thomas Ordway, undulant fever.

Society News.—A symposium on "Medical Care for the People of Nassau County" was presented before the Medical Society of Nassau County, June 1, by the society's committee on medical economics. Dr. Frederic E. Elliott, Brooklyn, also addressed the meeting on "Financing Sickness."—Dr. Harry K. Tebbutt, Jr., Albany, addressed the Schoharie County Medical Society, Schoharie, May 9, on "Sinus Conditions from the Standpoint of the General Practitioner."—Dr. Samuel G. Gant, New York, was guest speaker before the Dutchess-Putnam County Medical Society, Poughkeepsie, May 17, on "Benign and Malignant Tumors of the Rectosigmoidal Region."—At a meeting of the Broome County Medical Society in Binghamton, June 6, Drs. Eldridge L. Eliason and Thomas Grier Miller, Philadelphia, spoke on "Catastrophes of Peptic Ulcer" and "Commoner Causes of Indigestion with Special Reference to Chronic Gastritis," respectively.

New York City

Courses in Psychoanalysis.—Extension courses in psychoanalysis will be offered during 1933-1934 by the New York Psychoanalytic Institute. They will begin in October. Psychoanalysis in its application to social work, pedagogics, law and medicine will be covered in the courses, in addition to eight popular lectures on the subject.

Personal.—Drs. Foster Kennedy and Joseph Jordan Eller addressed the Academy of Medicine of Mexico City, recently, on "Symptomatology of Expanding Lesions of the Brain" and "Newer Developments in the Treatment of Skin Disease," respectively.—The honorary degree of doctor of science was conferred on Dr. Florence Rena Sabin of the Rockefeller Institute for Medical Research by New York University at its annual commencement, June 6.—A tablet was unveiled, May 16, at Reconstruction Hospital, in memory of the late Dr. William G. Thompson, first president of the hospital.

Resolution on Plastic Surgery.—A resolution directed toward informing the public of the true nature of plastic surgery was adopted by the Society of Plastic and Reconstructive Surgery, May 26. The resolution stated that sensational stories frequently appear in the lay press conveying the impression that plastic surgery is purely for cosmetic purposes. Such stories are designed to appeal to unstable persons who have no genuine deformity, and give the impression that plastic operations can be performed by lay cosmeticians in an environment that does not provide strict asepsis and other safeguards found in a hospital operating room. It was decided to take steps to inform the public that plastic surgery embraces the reconstruction of defects and malformations as well as the repair of gross cosmetic deformities, that plastic surgeons require strict training and that even minor procedures should be performed in first class operating rooms. The society resolved to warn the public of the danger of surgery at the hands of unqualified persons and the unreliability of "sensational, self-aggrandizing publicity."

PENNSYLVANIA

Nine Practitioners Honored.—Nine physicians who have practiced fifty years or more in central Pennsylvania were guests of honor at the annual meeting of the Sixth Council District of the Medical Society of the State of Pennsylvania at Pennsylvania State College, May 11. Certificates were presented to Drs. John L. Brubaker, Juniata; Samuel J. Boyer, Milroy; David Clarence Confer, Duncansville; John P. Getter, Belleville; William L. Lowrie, Tyrone; Vincent I. McKim, Lewistown; Emory H. Morrow, Altoona; James L. Seibert, Bellefonte, and Amos W. Shelley, Port Royal. Drs. Leonard G. Rowntree and John B. Carnett, Philadelphia, presented the

scientific program, speaking on "Advances in Knowledge of the Endocrines" and "Neuralgic Pain in All Parts of the Body," respectively.

Society News.—Dr. William K. Kalbfleisch, Wheeling, W. Va., among others, addressed the Washington County Medical Society, Washington, June 14, on "Roentgenological Diagnosis of Intestinal Obstruction."—Dr. William H. Crawford, Philadelphia, addressed the Delaware County Medical Society, June 15, at the Springhaven Country Club, on "Infant Feeding and Summer Care."—Dr. Karl Kornblum, Philadelphia, addressed the Northampton County Medical Society, May 19, on "The Value of the Roentgen Examination in Modern Medical Practice."—Dr. Dean Lewis, Baltimore, President, American Medical Association, addressed the York County Medical Society, May 20, on differential diagnosis of bone lesions.—Dr. Henry T. Price, Pittsburgh, addressed Cambria County Medical Society, Johnstown, June 8, on "Malnutrition and Diet in Children," and Dr. John Paul McCloskey presented a review of research on the nose and throat.

Philadelphia

University News.—Dr. Haven Emerson, New York, addressed the graduating class of the Woman's Medical College of Pennsylvania at the eighty-first annual commencement, June 7, on distribution of medical care. At the annual alumnae banquet, among other speakers, Dr. Carroll L. Birch, Chicago, spoke on hcmophilia and Dr. Robert T. Frank, New York, on the present status of the sex hormone. Dr. Julia Faith Skinner Fetterman was elected president of the Alumnae Association.

Hospital News.—The cornerstone of the Fridenberg Memorial Surgical Building of the Jewish Hospital was laid, June 7. The building will be a memorial to Samuel M. and Esther Fridenberg and their three sons, under the provisions of the will of Monc Samuel Fridenberg.—A new building for the Skin and Cancer Hospital of Philadelphia will open in September with a staff of forty physicians under the direction of Dr. Albert Strickler. The four story building will give twenty-two beds to the hospital, which has hitherto been only a dispensary. It is the gift of an anonymous member of the board of trustees. Special emphasis is planned on research in dermatologic and neoplastic fields, for which pathologic, tissue culture and chemical laboratories are now available.

Student Prizes.—Three prizes for research in medicine were awarded to students in the University of Pennsylvania School of Medicine at a recent meeting of the undergraduate medical association. Franklin M. Kern, Philadelphia, and Leon S. Smcdo, Elkins Park, won the Mary Ellis Bell prize of \$50 and a medallion for a study of saccharoids. Josiah K. Wallis, Malvern, James V. D. Quereau, Reading, and Laurence M. Wiig, Fort Landerdale, Fla., received the John G. Clarke prize of a gold key and \$50 for research on the effect of divinyl ether on the livers of dogs and monkeys. Nathaniel Gildersleeve, Lansdowne; Ross E. Hobler, New York, and William V. Rucker, Bedford, won the Grayhe Simpson Priestly prize of \$25 for a study of the cytology of aseptic peritoneal exudate in the mouse.

Medicine and Dentistry to Be Coordinated.—A half century of progress in dentistry at the University of Pennsylvania was recently celebrated at a special convocation. Addresses were delivered by Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, on "The Relation of Dentistry to Public Health" and Herbert S. Jennings, LL.D., Baltimore, on "The Biologist's Outlook on the World." A new plan for coordination of the medical and dental schools in the university was announced by President Thomas S. Gates at a dinner following the convocation. Under the arrangement just completed, the professor of medicine in the medical school will assume a chair of the same name in the dental school. Training for dental students in the future will include medical clinics and laboratory work and a hospital internship, he said.

Personal.—Dr. Spencer Leon Israel, chief resident physician at Mount Sinai Hospital, has been awarded the Henry B. Shmookler Memorial Fellowship for graduate medical study by the board of trustees of the hospital. Dr. Israel will study gynecology in Vienna and in Lund, Sweden.—Dr. and Mrs. William E. Hughes celebrated their fiftieth wedding anniversary, May 26.—Dr. Wilmer Krusen, president of the Philadelphia College of Pharmacy and Science, received the honorary degree of doctor of science at the commencement exercises of Franklin and Marshall College, Lancaster, June 7.—Dr. Chevalier Jackson professor of bronchoscopy and esophagography, Temple University School of Medicine, has accepted an invitation to teach three months each year at Louisiana State Uni-

versity School of Medicine, New Orleans.—Dr. Hermann Nunberg, Vienna, Austria, has returned to the Institute of the Pennsylvania Hospital to continue analytic work, according to an announcement from the institute.—Dr. Louis H. Clerf was recently elected president of the Philadelphia Laryngological Society.

RHODE ISLAND

State Medical Election.—Dr. Charles S. Christie, West Warwick, was installed as president of the Rhode Island Medical Society at its annual meeting, May 18. Dr. Albert H. Miller, Providence, was named president-elect, and Dr. James W. Leech, Providence, was reelected secretary.

SOUTH CAROLINA

Society News.—Dr. Edward P. White, Gaffney, health officer of Cherokee County, was elected president of the South Carolina Public Health Association at the recent annual meeting in Spartanburg.—Dr. Watson S. Rankin, director of the hospital and dependent children's section of the Duke Endowment since June 1, 1925, was the speaker at the commencement exercises of the Medical College of the State of South Carolina.

Personal.—Dr. George R. O'Daniel, St. George, has resigned as health officer of Dorchester County, effective May 19. Dr. O'Daniel plans to reenter private practice in Hartsville.—Dr. John C. Caldwell, Chester, was appointed a member of the state board of medical examiners, May 9, succeeding Dr. Robert E. Abell, Chester, resigned. Drs. Joseph T. Taylor, Adams Run, and Frank Lander, Williamston, were reappointed members.

WASHINGTON

Hospital Renamed.—The Martha Washington Hospital, Seattle, has been renamed Maynard Hospital in honor of Seattle's first physician, Dr. David S. Maynard, according to *Northwest Medicine*. In 1850, Dr. Maynard crossed the plains and settled in Olympia, and located at Alki Point in 1852, before Seattle was founded. Dr. Maynard, who died in 1873, established the first hospital in Seattle.

Health at Tacoma.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended June 17, indicate that the highest mortality rate (18.1) appears for Tacoma and that the rate for the group of cities as a whole is 10.6. The mortality rate for Tacoma for the corresponding week of last year was 9.6 and for the group of cities, 10.1. The annual rate for eighty-five cities for the twenty-four weeks of 1933 was 11.6, as against a rate of 12.1 for the corresponding period of the previous year.

WISCONSIN

State Medical Election.—Dr. Thomas J. O'Leary, Superior, was named president-elect of the State Medical Society of Wisconsin at the annual meeting in Milwaukee, June 13. Dr. Stanley J. Seeger, Milwaukee, was installed as president. The society dispensed with its scientific program because of the annual session of the American Medical Association in Milwaukee, June 12-16. It was voted to hold the 1934 session in Green Bay.

GENERAL

Changes in Status of Licensure.—The Commission on Licensure of the Healing Arts Practice Act of the District of Columbia reported the following:

Dr. Clarence A. Wright, license revoked, May 26. He has been convicted and sentenced to jail for performing illegal operations.

The Board of Medical Examiners of the State of Oregon reports the following:

Dr. Charles H. Rogers, Portland, license restored, February 1. The license was revoked, April 3, 1930.

Collection of Documents of Ophthalmologists.—The American Ophthalmological Society has formed a committee to collect autographs, letters and other documents, portraits and objects of interest relating to the early ophthalmologists of the country, to be placed in the Army Medical Library at Washington, D. C. Members of the committee are Drs. Harry Friedenwald, Baltimore; Arnold Knapp, New York, and Burton Chance, Philadelphia. They ask the cooperation of all ophthalmologists in the undertaking. Inquiries will be answered by Dr. Friedenwald, 1212 Eutaw Place, Baltimore.

Reduction in Veterans' Benefits Modified.—Legislation modifying the stringent reductions in veterans' benefits recently ordered under the Economy Act was enacted in the closing sessions of Congress. Reductions as finally agreed on will save about \$320,000,000 annually, \$100,000,000 less than the

savings originally planned. The President is authorized to appoint special boards to review claims in which presumptive service connection has been granted, provided the veteran entered service prior to Nov. 11, 1918, and provided the disability is not the result of his own misconduct. Neuropsychiatric diseases if developed within a year and tuberculosis if developed within two years are presumed to be of service origin. Under the original regulations issued in March, all non-service-connected cases except persons totally and permanently disabled were removed from the rolls. The final compromise also guaranteed that compensation in service-connected cases will not be reduced more than 25 per cent.

Meetings of Psychiatrists.—Dr. George H. Kirby, New York, was elected president of the American Psychiatric Association at the annual meeting in Boston, May 29-June 2. Dr. Charles F. Williams, Columbia, S. C., was made vice president and Dr. William C. Sandy, Harrisburg, Pa., secretary. Among speakers at the meeting were:

Dr. Charles J. C. Earl, Caterham Mental Hospital, Surrey, England, who displayed drawings made by mental defectives.

Dr. Abraham A. Brill, New York, Homerotism and Paranoia.

Drs. Lawrence O. Morgan, Cincinnati, and Hugh S. Gregory, Binghamton, N. Y., Changes in the Tuber Cinereum Region in the Psychoses.

Dr. Leland E. Hinsie, New York, Determinants of Adequate Psychotherapy in a Public Mental Hospital.

Dr. Meyer Solomon, Chicago, The Struggle for Equilibrium.

Drs. Bernard T. McWhie and George C. Brink, Toronto, A Tuberculosis Survey in Mental Hospitals.

Dr. Earl D. Bond, Philadelphia, and Willem Van de Wall, D.M.S., New York, Uses of Music in a Case of Psychoneurosis.

Dr. Stanley Cobb, Boston, Cerebral Anemia.

Drs. Hiram Houston Merritt, Jr., and Merrill Moore, Boston, The Argyll Robertson Pupil.

Dr. Abraham Myerson, Boston, Social Psychiatric Aspects of the Minor Delinquent.

Society News.—Dr. W. Gordon M. Byers, Montreal, was installed as president of the American Ophthalmological Society at its annual meeting, May 29, and Dr. Walter B. Lancaster, Boston, was named president-elect. Dr. John Milton Griscom, Philadelphia, was reelected secretary. The next annual session will be held in Lucerne-in-Quebec, Canada, July 9-11, 1934.

—Dr. John R. Page, New York, was installed as president of the American Otological Society at its recent annual meeting; Dr. Samuel J. Crowe, Baltimore, was named president-elect, and Dr. Thomas J. Harris, New York, reelected secretary.

—Officers of the American Laryngological Association are Drs. George M. Coates, Philadelphia, and William V. Mullin, Cleveland, president and secretary, respectively. —At the annual meeting of the American Climatological and Clinical Association, Dr. Charles D. Parfitt, Gravenhurst, Ont., Canada, was made president, and Dr. Francis M. Rackemann, Boston, secretary. The next annual session will be held in Toronto in May, 1934.—Dr. Charles A. Fife, Philadelphia, was named president of the American Pediatric Society at its annual meeting, May 10, and Dr. Hugh McCulloch, St. Louis, reelected secretary. The next annual session will be held at Grove Park Inn, Asheville, N. C., in May, 1934.—Officers of the American Gynecological Society, elected at the annual meeting, May 9, are Drs. Frank W. Lynch, San Francisco, and Otto H. Schwarz, St. Louis, president and secretary, respectively.

—New officers of the American Gastro-Enterological Association, elected May 8, are Dr. John Bryant, Boston, president; Dr. B. B. Vincent Lyon, Philadelphia, first vice president, and Dr. Russell S. Boles, Philadelphia, secretary.—Dr. Israel Strauss, New York, was made president of the American Neurological Association at its annual meeting, May 10, and Dr. Henry Alsop Riley, New York, reelected secretary.—Dr. Harvey Cushing, Boston, and Dr. John T. King, Jr., Baltimore, will continue as president and secretary, respectively, of the Congress of Physicians and Surgeons of North America. The next congress will be held in 1938.—Dr. Daniel F. Jones, Boston, was elected president of the American Surgical Association at its annual meeting, May 8-10; Drs. LeGrand Guerry, Columbia, S. C., and John L. Yates, Milwaukee, vice presidents, and Dr. Vernon C. David, Chicago, secretary. The next annual session will be held at Toronto in May, 1934.—At the annual meeting of the American Laryngological, Rhinological and Otological Society, June 8, Dr. James W. Jervey, Greenville, S. C., was elected president, and Dr. Robert L. Loughran, New York, reelected secretary.—The twenty-second annual meeting of the Pacific Coast Oto-Ophthalmological Society was held at the Fairmont Hotel in San Francisco, June 28-30, with Dr. George L. Tobey, Jr., Boston, as the guest speaker.—Dr. Edward S. Godfrey, Jr., of the New York State Department of Health, Albany, was elected president of the American Epidemiological Society at the recent annual meeting in Washington, D. C.—The next annual convention of the American Red Cross will be held in Washington, D. C., April 9-12, 1934.

HAWAII

Territorial Election.—Dr. Arthur C. Rothrock, Paia, Maui, T. H., was elected president of the Hawaii Territorial Medical Association at its annual meeting in Honolulu, May 1. Dr. Lyle G. Phillips, Honolulu, was reelected secretary. The next annual session will be held on the island of Kauai. Guest speakers were Drs. William S. Middleton, Madison, Wis., on nephritis, and Barney Brooks, Nashville, Tenn., on arterio-venous aneurysm. In addition to a clinic on leprosy by Dr. Newton E. Wayson, the program also included papers by the following Honolulu speakers:

Dr. Nils P. Larsen, G. P. Pritchard, D.D.S., and Martha Jones, Ph.D., *Medicodental Research in Hawaii*.
Dr. Francis H. A. Gaudin, *Aspects of Artificial Feeding of Infants*.
Dr. Joseph W. Lam, *Vasectomy*.
Dr. Forrest J. Pinkerton, *Leprosy of the Eye, Ear, Nose and Throat*.
Dr. Arthur W. Duryea, *Treatment of Tuberculosis: A Plea for Collapse Therapy*.
Dr. Joseph E. Strode, *Subphrenic Abscess as a Complication of the Acute Abdomen*.
Dr. Frank A. Plum, *Subdural Hemorrhages in Infancy and Youth*.
Dr. Adolph G. C. Schnack, *Dental Infection*.
Dr. Edwin D. Kilbourne, *Inner Secretion of the Prostate Gland*.
Dr. Stewart E. Doolittle, *Tuberculosis in Children: Changing Concepts*.
Dr. Grover A. Batten delivered the presidential address, on "Medical Ideals and Their Application to Present Problems."

CANADA

Personal.—Dr. John A. Amyot, for fourteen years deputy minister of national health and, more recently, of pensions and national health, has retired because of ill health. From 1900 to 1919 he was associated with the provincial department of health of Ontario and also with the public health teaching staff at the University of Toronto.

Academy Honors Dr. Bruce.—The Toronto Academy of Medicine gave a dinner, March 27, at the Royal York Hotel in honor of Dr. Herbert A. Bruce, who was recently appointed lieutenant-governor of the province of Ontario. Dr. Reginald S. Pentecost and Dr. Harry B. Anderson paid tribute to Dr. Bruce in addresses, to which he responded. A portrait of the lieutenant-governor by Joshua Smith was presented to the academy by Mrs. Bruce, who officiated at the unvailing.

Society News.—The Canadian Pharmaceutical Association will hold its annual session, August 21-25, in Montreal. — Dr. Arthur J. Bedell, Albany, N. Y., addressed the Toronto Academy of Medicine, March 7, on "Ophthalmoscopic Interpretation of Blood Vessel Changes." Dr. Allen O. Whipple, New York, spoke, February 7, on "The Type of Carcinoma in Its Relation to the Operability and Late Results in Carcinoma of the Stomach." — The Canadian Public Health Association held its annual meeting in St. John, N. B., June 19-21, in conjunction with the meeting of the Canadian Medical Association. Among other speakers, Sir Humphry Rolleston, London, England, and Col. Lyle Cummins, Cardiff, Wales, was to participate in a program devoted to tuberculosis.

FOREIGN

Congress Postponed.—The ninth annual congress of the Far Eastern Association of Tropical Medicine, which was to have been held in Nanking, China, October 2-8, has been postponed. Announcement of the place and date of meeting will be made later.

Society News.—The first French Congress of Therapeutics will be held in Paris, October 23-25, under the presidency of Dr. Loeper. Papers will be presented on the following subjects: parenteral treatment of gastric ulcer; treatment of colibacillosis; the suprarenals; short waves in therapeutics, and treatment of radiodermatitis. For information apply to Dr. G. Doin, 8 Place de l'Odéon, Paris.

Orthopedic Congress.—The second International Congress for Orthopedic Surgery will meet in London, July 19-22, under the presidency of Professor Nové-Josserand, Lyons, France. Subjects to be discussed the first two days are the mechanism of articular movements and the treatment of tuberculous hips. The third day will be devoted to special papers, some of which will be given by Drs. Willis C. Campbell, Memphis, Tenn.; Arthur Steindler, Iowa City; Walter G. Stern, Cleveland, and Dr. Lorenz Boehler. There will be operative clinics in several London hospitals. Meetings will be at the headquarters of the Royal Society of Medicine, 1 Wimpole Street, where members of the congress are asked to register as soon as they arrive in London. Dr. Fred H. Albee, New York, is chairman of the American committee.

Deaths in Other Countries

Sir Walter Morley Fletcher, Kensington, London, secretary of the Medical Research Council, died June 7.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 3, 1933.

The London Voluntary Hospitals

King Edward's Hospital Fund for London, which was founded in 1897 to collect money for the support of the voluntary hospitals, has distributed \$37,000,000 in the period which has elapsed. The report for 1932 is satisfactory under the circumstances. The financial depression compelled some of the subscribers to the voluntary hospitals to reduce or discontinue their contributions. A special effort was therefore made to obtain additional subscriptions and to effect economies so as to avoid the closing of beds. So successful has this been that a small aggregate balance on the right side will again be shown. There was a slight decrease in income, but this has been more than offset by the reduction of expenditures. The total receipts of the king's fund for the year were \$1,630,000, and \$1,500,000 was distributed to the hospitals. The number of pay beds provided by the voluntary hospitals of London at the end of 1932 was 1,667 at 105 hospitals against 577 at 104 hospitals in 1931. The charges for these beds range from \$10 to \$50 a week, exclusive of medical and surgical fees. During June last the scheme of the British Provident Association which enables members of the professional and middle classes to make provision toward the cost of treatment in a pay bed was launched. A committee of the fund inquired into outpatient methods as affecting the suitability of patients and the time of waiting, about which complaints had been made. The conclusion was that part of the waiting was unavoidable, because of the large populations dealt with, but that part was due to the treatment of an excessive number of minor cases, which could be dealt with by other agencies. The committee recommended that the present movement toward the more consultative use of outpatient departments, except for emergencies, should be encouraged, except that a patient desiring to attend a hospital and unable to pay a consultation fee should have access without a physician's letter. Considerable results had followed from the recommendation that the hour of waking patients in the morning should not be earlier than 6 o'clock. The number of hospitals in which this practice had been adopted had increased during the year from forty-seven to sixty-nine, while fifteen others made changes in the desired direction.

The Transmutation of the Elements

Before a distinguished audience, including Professor Einstein and Dr. H. N. Russell, professor of astronomy at Princeton University, Lord Rutherford delivered the annual Boyle lecture of the Junior Scientific Club, Oxford. He referred to the fascination exercised over men's minds, since the dawn of science, by the possibility of the transmutation of the elements. Progress in such transmutation had been made by producing and speeding up intense streams of protons and other particles. The most obvious way to obtain very fast protons was to allow the stream to pass through a highly evacuated space to which a high difference of potential of the order of a million volts was applied. The first successful application of the high voltage method of generating fast particles for producing atomic transmutation was made by Cockcroft and Walton last year in the Cavendish laboratory. To carry out experiments at low voltages, Lord Rutherford and Dr. Oliphant designed an apparatus to obtain much narrower and stronger proton beams of the order of 100 micro-amperes. They found that the transmutation of lithium could easily be observed when the proton had an energy of only 30,000 volts. "In a sense we are opening up today a new branch of knowledge—nuclear chemistry—

where we deal with the combination and dissociation, not of atoms as a whole, but of the ultimate units which make up the minute world of the nucleus."

Bill to Insure Payment for Road Accidents

Lord Moynihan has introduced a bill into the house of lords which provides that a physician or hospital rendering emergency treatment for bodily injury arising out of the use of an automobile on a road shall be entitled to recover reasonable remuneration not exceeding \$15 from the owner of the automobile, in the same manner as if the treatment were rendered at his request. In addition, the physician will be entitled to recover 12 cents for every mile beyond 2 miles traveled by him in complying with the call, notwithstanding that the injured persons may have died before receiving treatment.

The Assistance of Refugees from Germany

The formation of the Academic Assistance Council to assist scholars and men of science who have lost their positions in consequence of the German persecution has been reported in a previous letter. The president of the council is Lord Rutherford and the most eminent scientists, including those of the medical profession, are supporting the movement. At the first meeting of the council, held at the headquarters of the Royal Society, it was reported that distinguished scholars continue to be discharged or have their lives rendered intolerable in German universities. The council proposes to provide for them on a temporary basis by grants which will not interfere with British workers in similar fields. The council is in contact with similar bodies in France, Switzerland, the United States, Holland and Belgium, so that any overlapping will be avoided. There is hope of accommodating a large proportion of the dispossessed academic class in existing institutions, the reputation and activity of which will be increased. It is impossible to estimate the number of teachers of high academic rank who have been discharged or forced to resign from German universities, but the number is in the neighborhood of 400. Among them are several professors of theology. A number of distinguished physicists have left the University of Berlin, and the great mathematical school at Göttingen has been deprived of some of its most eminent exponents. Philosophy and medical research have suffered heavily everywhere.

Another organization that is offering help is the Cambridge branch of the All People's Association, which has taken steps to welcome visitors from foreign countries who are likely to come to Cambridge. The association has received offers of hospitality for such cases.

Congress of Urologists

The fifth congress of the International Society of Urologists will be held in London in July under the presidency of Sir John Thomson-Walker. He will hold a reception on the 10th, and on the following morning Prince Arthur of Connaught will formally open the congress at the house of the Royal Society of Medicine. The three principal subjects chosen for discussion are tumor of the renal pelvis and ureter, by Prof. Salvador Pascual, Prof. F. Van den Branden and Mr. J. Swift Joly; pyelography by the descending route, by Prof. A. von Lichtenberg, Prof. C. Ravasini and Mr. R. Ogier Ward, and surgery of the neck of the bladder, by Prof. G. Marion, Prof. J. Weijtland and Mr. Kenneth Walker. There will be receptions by the government, the lord mayor of London and the Royal College of Surgeons.

Children and Accidents

At the National Safety Congress, now being held in London, G. H. Gater, of the London County Council, read a paper in which he said that in Great Britain approximately 4,000 children lost their lives each year in accidents, about half of which occurred in the home and the other half in traffic. The greatest

incidence was between the ages of 5 and 9 years. The solution of the problem lay in the development of a keen sense of self-preservation which unconsciously shaped conduct in traffic, and that is one of the tasks of those charged with the education of the child.

Fee Splitting Denounced

Sir Norman Walker, president of the General Medical Council, stated at the last meeting that he was informed that the practice of fee splitting, which he had heard was regrettably prevalent in other countries, was raising its head in this country. He wished that he could think that his information was incorrect. The essence of the offense was that, unknown to the patient, part of the consultant's fee was paid to the physician who advised the consultation. The commission was thus secret and the receipt of such a commission was recognized in this country as against the public interest and was forbidden by law. A conviction under the act for punishment of corrupt transactions would inevitably bring the offender under the jurisdiction of the council.

PARIS

(From Our Regular Correspondent)

May 17, 1933.

Undue Fear of Tuberculosis

The Comité national de défense contre la tuberculose has published an article by Prof. Léon Bernard, designed to put the public on its guard against undue fear of tuberculosis. By the number of placards urging the avoidance of contagion by refraining from spitting in public places, a veritable psychosis has been created in the minds of persons who were predisposed. The fear of tuberculous contagion haunts them. They take ridiculous precautions. As soon as they cough they consult a physician, demanding that they be examined and radiographed, or they use self-medication recommended by advertisements in the daily press. They go from one physician to another, until they finally encounter a charlatan who exploits their credulity. Another class are those who have a tuberculous patient in the family. They go to extremes in protecting the patient, demoralizing him, whereas he may not be contagious at all. These overworried persons communicate their phobia to those about them. In workrooms they demand the dismissal of an employee who coughs. In the large hotels along the Mediterranean border, it frequently happens that the house steward, at the instance of certain clients, requests any one who coughs too often to procure a statement from his physician that he is not affected with tuberculosis, on pain of expulsion. The worst part of the situation is that persons who are actually tuberculous, feeling themselves the objects of surveillance, seek to conceal their condition for fear of losing their employment; neglect to visit a dispensary for fear of being observed there, and fail to take proper care of themselves. Mr. Léon Bernard called attention to the real conditions under which tuberculosis becomes contagious, emphasizing that contagion is rare between adults, except under peculiar circumstances. On the contrary, he stressed the need of establishing immunity in childhood by early inoculation with BCG vaccine.

The Pathogenesis of Peptic Ulcer

In an address before the Société des chirurgiens in Lyons, Professor Leriche and R. Fontaine reported the results of a long series of experiments on the genesis of peptic ulcer. They employed the Mauss method, which consists in the withdrawal of digestive fluids (biliary and pancreatic). They succeeded in all cases in producing typical ulcers. When later the normal insertions of the tracts are restored, the ulcers heal. Leriche does not accept the explanation ordinarily given, namely, the suppression of the duodenal reflux toward the stomach. He regards such reflux as a doubtful feature of normal digestion. Leriche thinks that the protective rôle of the mucosa belongs rather to the mucus. But this has a tendency to dissolve and

to disappear in an alkaline medium. That is perhaps the reason why ulcers develop more commonly on an alkaline mucosa. This conception is partly confirmed by the fact that the ulcer can be prevented, even after withdrawal of the digestive fluids, if the patient is allowed to ingest a daily dose of mucin.

Color of the Eyes and Puberty

A communication has been presented to the Academy of Medicine by Mr. Paul Godin of Nice on the "Evolution of the color of the eyes under the influence of puberty." The color of the eyes is due to the pigmentation of the iris, but in 50 per cent of adolescents the pigmentation changes its color several times during the onset of puberty. The iris is formed by two concentric circles diversely colored. The colors are distributed in the form of striae, specks, stippling and rays, on a colored background. They appear, disappear and are transformed from one form into another, until a more or less complete change in the primary coloration of one of the zones, and often of both, is brought about. This evolution ends generally in a "lightening" of the original color in both girls and boys, but without following any fixed rules. Light eyes and delayed puberty are often accompanied by numerous changes. A judicial expert finds herein the key of the problem that develops when a delinquent aged 17 years no longer has the blue eyes recorded on his anthropometric chart made out at age 15. A complete "oculochromatic scale" was prepared on the basis of 100 observations made during the course of this research.

The Medical Convention of Bordeaux

The medical convention (*journées médicales*) of Bordeaux was devoted to the subject of cancer. At the opening session, under the chairmanship of Professor Bounhiol, communications on the etiology of cancer were presented by Malvesin Fabre and Lague, Delangière, Bounhiol, Manques of Toulouse, Pfeiffer of Dijon, and Prof. Nello Mori of Naples. The second day's session was presided over by Professor Mori.

Purification of the Air

Gaston Menier, chocolate manufacturer and senator of the department of Seine-et-Marne, has devised a simple procedure for purifying the air of his factories. Mr. d'Arsonval recently described the method before the Academy of Sciences. Menier conceived the idea of constructing an apparatus consisting of an endless canvas sheet held vertically between two electrically driven rollers. The lower part of the canvas passes through a trough containing a solution, which keeps the canvas moist. An electric fan drives the air against the canvas. The dust and germs become attached to the canvas and are collected in the trough below. Experiments have shown that the purification of the air in this way is practically complete in thirty minutes. When used in a freight car filled with particles in suspension and with toxic gases, the apparatus effected simultaneously an absorption of the carbon monoxide and a bacterial purification of the air. The procedure enables one to maintain also a certain degree of humidity in a heated room.

Creation of an Institute of Industrial Medicine

A decree of the minister of public health has established a course in industrial hygiene to be given at the *Faculté de médecine* de Paris. The plan is to attach directly to the *Faculté de médecine* centers of study now located in the biologic center at Auteuil and at the *Institut d'hygiène industrielle*. The new courses will provide instruction for medical students desiring to prepare themselves as health officers or inspectors of physiologic conditions of work in factories. The course will consist of three parts: (1) industrial hygiene, (2) occupational medicine and (3) chemical toxicology of industry, dealing with the rendering of expert chemical opinions pertaining to industrial poisoning. Three special courses will

be created corresponding to the three subdivisions, together with a graduate course comprising a series of lectures on industrial hygiene. The lectures will be given by professors and associate professors of the *Faculté de médecine*, and likewise by qualified persons not belonging to the *Faculté*. The lectures will be supplemented by practical work, including visits to factories, examinations of workmen, study of sanitation projects, the detection of harmful factors in an industrial environment, and the application of the teachings of industrial toxicology. The institute will grant a diploma in industrial hygiene and occupational medicine, which will furnish evidence of the ability of candidates to perform the duties of an industrial physician.

Service Medals Awarded to Physicians

The municipal council of Paris conceived the idea of holding special ceremonies at which its president, Mr. de Fontenay, awarded medals to the chief physicians of the hospitals of the Assistance publique who had completed twenty-five years of such service. This ceremony emphasized the disinterested nature of the duties of the chief physician of a hospital service. Such posts are much sought after, and the recruiting of the incumbents by means of severe tests assures the selection of élite candidates unaffected by political influence. The position bestows professional prestige and the best chances of achieving success. The salary schedules are low and are regarded more as reimbursement for traveling expenses. The number of physicians, surgeons and specialists who had completed twenty-five years of service was 132 and represented the medical élite of Paris. Mr. de Fontenay, in connection with the awarding of the medals specially struck for the occasion, delivered an address in which he expressed the gratitude of the people of Paris for their long and devoted service.

BERLIN

(From Our Regular Correspondent)

May 28, 1933.

Changes in Regulations Controlling Narcotics

In a decree of the federal minister of the interior, May 20, the regulations governing the medical prescribing of opiates and cocaine were modified to meet the demands of the medical profession with respect especially to the prescribing of cocaine. From June 1, 1933, on, cocaine not to exceed 2 per cent may be prescribed for use on the eyes as an ointment in place of a solution, which heretofore has alone been permitted, provided the presuppositions with respect to indications noted in *THE JOURNAL*, Feb. 28, 1931, page 706, obtain; that is to say, if the use of cocaine is unavoidable and the substitutes are inadequate. Prescriptions calling for the pure substance are still prohibited. With respect to cocaine ointment, it is stipulated, as for the solution, that the maximum of 0.1 Gm. of cocaine salts must not be exceeded. In addition to the amount prescribed directly "for a patient," the decree provides also that a certain amount may be secured for the needs of general practice. The maximum amount that may be secured per day remains unchanged (1 Gm.). Whereas the former decree permitted no dilution stronger than 10 per cent, now a 20 per cent concentration may be prescribed, or an ointment may be prescribed with a maximum concentration of 2 per cent in quantities of 50 Gm., containing a maximum of 1 Gm. of cocaine salts. The physician's entries in the "cocaine book" must still be made punctiliously, although certain welcome changes have been made. The regulations concerning the prescribing of opiates and the entries in the "morphine book" remain unchanged, as no serious objections to them were raised by the profession.

Now that two years has elapsed since the regulations greatly restricted the physician in prescribing opiates and cocaine, the effects can be measured to some extent. The examination of

prescriptions for remedies containing narcotics has given a favorable impression (all such prescriptions must be retained and preserved by the pharmacist for inspection) and there has been a marked decline in the consumption of narcotics, which is due partly to the smaller number of addicts (THE JOURNAL, Oct. 17, 1931, p. 1161). That the decline has not come at the expense of patients who actually need narcotics may be seen from the fact that, during the deliberations concerning the new decree, the representatives of the medical profession unanimously opposed any fundamental changes in the decree. The more moderate regulations of the new decree are due to the demands of the ophthalmologists and the ear, nose and throat specialists.

In the official *Reichsgesundheitsblatt* is found the statement "Owing to the strict compliance on the part of the medical profession, the consumption of narcotic drugs in 1932, as compared with 1930, declined 35 per cent in respect to morphine, 49 per cent for opium, 89.5 per cent for heroin and 80.5 per cent for cocaine. The regulations controlling the prescribing of cocaine preclude all possibility of catering to the demands of drug addicts." (THE JOURNAL, June 18, 1932, pp. 2179, 2180, 2182.)

Employment for the War Injured

A report of the federal minister of labor on the employment in federal bureaus of persons severely injured in the war shows that 4.07 per cent of the positions in federal bureaus were held by such persons. The highest percentage (10.77) is found in the federal ministry of labor; the federal postal ministry has 5.28 per cent; the federal ministry of finance, 4.97 per cent, and the federal railway system, 3.42 per cent. Other bureaus have smaller percentages.

Sex Education in the Home

The opinions of official circles on "Sex Instruction in Schools" have been announced, and there is general agreement that sex instruction of youth devolves on the home and not the school. Rust, the Prussian minister of public instruction, who has expressed his views in a special announcement, says that the sex instruction of youth has its foundation in the demands of religious and moral education and in the interest of health of body and mind of future generations. The question cannot be solved by the awakening of intellectual insight or by instruction in pure utilitarian ethics, incorporated in the general curriculum. Sex instruction cannot, in the nature of the case, be imparted to a large class. Nevertheless, supervisory boards should not be denied the privilege of demonstrating the possibilities of sex instruction. The minister declared, as a matter of principle, that all sex instruction must take development as its fundamental basis and must call into action all educational forces available in the home, the school and the community, and the religious solidarity of all persons concerned. It must be based also on the principle of awakening in the youth all ethically significant forces: will power, conscience, natural modesty and religious association. Sex instruction should deal primarily with (1) relation between morality and the sex impulse, as based on the personal, social and religious responsibility of the individual, (2) necessary biologic instruction on the general subject of propagation, and (3) the menace to health of an uncontrolled sex impulse. In principle, enlightenment in matters of sex devolves on the home. The school, however, has the task of supplying instruction by special meetings for parents, talks to mothers and individual discussion on the duties of this phase of education. Persons selected from the medical profession may be well utilized for such general instruction. An excellent method has already been established in some places. If the home fails, an understanding may be reached with the parents, and a male teacher may give private instruction to the boys and a woman teacher may do the same for the girls; it may be desirable in some cases to have a previous understanding with the family pastor and the family

physician or the school physician. The minister emphasized the need of considering each individual case separately, care being taken to avoid any appearance of compulsion. The success of these educational measures will determine to a great extent the moral character of youth and thus the moral qualities of the people as a whole.

MADRID

(From Our Regular Correspondent)

May 10, 1933.

Medical Problems in Spain

Dr. L. N. de Castro recently delivered a lecture on the unfavorable conditions of physicians in Madrid. In 1896 the number of students registered at the faculty of law was three times the number registered in the faculty of medicine. During the last seven years (1924 to 1932) the Faculty of Medicine of Madrid has had a greater number of students than any other school. At present there is a surplus of physicians and it constitutes a danger both for the physician and for the patient. A still greater danger is the insurance societies, which are supposed to give their members medical care and drugs during their illness and burial when they die. The societies for mutual insurance are as dangerous as the insurance societies. Generally speaking, both the physician and the patient cannot derive any benefit from these societies, which only exploit them. The members of the societies are made fabulous promises which never come true. They pay monthly fees, and when they are in need of special care they are not given satisfactory attention, and so they prefer to go to their own physicians. Dr. Castro believes that the only advantage of the insurance societies is to give their members a decent funeral. On account of the general economic crisis, many Spanish physicians are giving services under contracts which grant them but small salaries. The condition of Spanish physicians has become worse as a result of free medical care given in several hospitals and clinics of public beneficence or official centers for the care of the poor. In these centers, physicians, as a rule, give their services free. The economic condition of the physicians in large cities is made worse by the fact that some members of the profession hold several positions. In studying the statistics, he found the following data: Among about 3,000 physicians practicing in Madrid, 400 have great prestige, a large clientele and most of the official and private positions, while the remaining 2,600 physicians are in bad economic condition. In Spain there are 1,000 inhabitants for each physician. These statements are of value, since they have been published in the *Boletín oficial del Colegio oficial de médicos de Madrid*. The profession hoped to see a more even distribution of the positions under the new governmental régime, but up to the present (with the exception of the lamentable expulsion of some members, such as Dr. Noguera, who was suspended from the direction of the Hospital de la Cruz Roja), all the positions are held by certain members. The medical profession has a sad outlook. Probably that is why the local members of the profession do not approve of the coming to Spain of the German physicians who recently suffered persecution in Germany, some of whom are already in Madrid. In view of the hospitality shown them by prominent members of the medical profession, it is believed that more German physicians will arrive in the near future. This is a difficult problem for the Spanish profession under the present circumstances. Some physicians favor the coming of German physicians, while others see in them competitors who have a well earned reputation and, some of them, even worldwide fame.

The Schilling Hemogram

Dr. Verdes Montenegro recently gave a series of lectures, at the Instituto Rubio, on the value of the Schilling hemogram in the detection of residual tuberculous lesions. A comparison

was made of the diagnostic value of the Arneth formula and the Schilling hemogram. The Arneth formula deals only with polymorphonuclear neutrophils, while the Schilling hemogram includes myelocytes, metamyelocytes, rod and segmental forms of neutrophils, basophils, eosinophils, lymphocytes and monocytes. Having used both methods for five years in the Instituto Rubio, he considers that in the detection of residual lesions of pulmonary tuberculosis the Schilling hemogram shows a sensitiveness that cannot be equaled by any other method of clinical investigation, including the roentgen examination. The activity of lesions in patients considered as cured, which is not detectable by any other clinical method, can be detected by the Schilling hemogram. The speaker showed hemograms and roentgenograms obtained from suspected tuberculous persons and commented on the results from both methods. He explained the significance of an increase or decrease of certain cells, such as lymphocytes and monocytes. The index of nuclear deviation is high in persons living in a tuberculous environment. It goes back to normal when the person moves from this environment. The association of nuclear deviation and neutrophilia is of clinical importance because it is generally observed in patients in whom the cure of tuberculosis seems to be permanent. The speaker explained the significance of the variations of the leukocytic formula and the increase of lymphocytes and monocytes in different forms of active tuberculosis because the normal hemogram in residual tuberculosis is an indication of the more or less lasting inactivity of the tuberculous foci.

Drug Addiction in Spain

Dr. Rodriguez Vera, a member of the National Board Against Toxicomania in Spain, recently lectured on the abuse of narcotics. He reported his observations on the influence exerted by drug addiction on the offspring. When the father is the addict, the children inherit a poor constitution with delayed growth and hyperexcitability of the nervous system. The muscular capacity is greatly diminished in those children; poor functions of alimentary assimilation and frequently infantile diarrhea are found. When the mother is the addict, the children as a rule die about three days after they are born. The fetal blood as well as the blood of the mother is saturated with toxic products. New-born infants of addict mothers are in a condition similar to that of an addict adult, without having the resistance of the adults. Some children in this group cannot suckle and cry from the time they are born until they die. As a rule they die in three or four days in convulsions. In 1932, Dr. Rodriguez Vera stated that 141 sellers of narcotics (morphine, cocaine, diacetylmorphine and others) were detected by the authorities. Sixty pharmacists have been prosecuted for smuggling narcotics. A list of all the convict addicts has been made, which contains more than 2,000 names. The daily press reported recently the case of two shoe-blacks who were carried to a first aid station because they were intoxicated. While they were not being watched, they stole all the narcotics at the station. This and other like cases show the prevalence of drug addiction in Madrid.

Deaths

Dr. Sanchiz Banús, president of the School of Medicine of Madrid and psychiatrist of the Beneficencia Provincial of Madrid, died unexpectedly. He was a deputy of the house of representatives, elected by the socialistic party. He was an exponent of modern psychiatric theories. Dr. Sanchiz Banús was not rich; his family should be helped by the socialistic group, to which he gave great support.

Dr. L. Lopez García, a prominent histologist of Valladolid, who had retired, because of his age, died. For years he was a professor of pathologic histology. Such prominent histologists as Drs. Perrin of Mexico and del Rio Ortega of Madrid were his pupils.

BUCHAREST

(From Our Regular Correspondent)

May 6, 1933.

Pensions for Aged and Incapacitated Physicians

In Rumania, until now, the National Medical Association has been the only organization that has helped distressed physicians, which it has done by means of modest financial support. The association distributed from 1922 to 1932 a total of 318,900 lei, in amounts varying from 500 to 5,000 lei. Under the present circumstances, when general distress has ruined even the best of medical practices, the distribution of such small sums is ridiculous. The distribution of alms that are not only insufficient but humiliating must be given up and a pension system of permanent character established.

The economic crisis in the Rumanian medical profession affects all physicians. Searching for the causes, aside from the general financial crisis, one finds two underlying factors: a lack of organization among physicians and an overproduction of physicians. The symptoms of poverty in the profession are being accentuated from day to day. There is a more restricted field for physicians wishing to practice, and competition becomes ever more severe. There are about 8,000 practitioners, of whom 2,000 are in Bucharest, which is too many in proportion to the population. Among such conditions, there is a need for old age and invalidity pensions for doctors. Not every European country can boast of such institutions. In Austria, where about 80 per cent of the population is on the panel, the following system has been introduced: All medical fees accruing from the treatment of panel patients are collected in a common office, and from this sum the necessary amount for the maintenance of the medical benevolent institutions is deducted. From this source a home for aged doctors has been erected in Upper Austria at a cost of about \$100,000.

In Denmark, obligatory old age insurance was attempted but proved unsuccessful. There are, however, two medical benevolent institutions: one for aged physicians, the other for the widows and orphans of doctors who have died without material means.

In Belgium there is a medical benevolent association, based on individual dues. Every doctor may become a member, if he pays the dues from his twenty-fifth year on. If he joins after this age, the fees have to be paid retrospectively.

In Liège, Belgium, there is a mutual benevolent office where members paying a fixed sum are entitled to a daily allowance in case of sickness. Also a group of doctors in Belgium contracted with an insurance company to pay a minimal yearly premium for insurance in case of death or permanent disability, amounting to 25,000 Belgian francs; this sum may be increased up to 100,000 francs. There is another well organized insurance company in Belgium, managed exclusively by physicians. This company insures its members against liabilities arising out of malpractice, accidents and other contingencies.

In Switzerland there is an old age pension institute whose membership is limited to physicians under 40 years of age who are healthy and are members of the national medical association. This institution operates independently a cooperative society, which grants loans to distressed members. There is also a medical benevolent society which, from the voluntary contributions of physicians and others, grants allowances to physicians who are incapacitated and to their relatives.

In Poland there is compulsory mutual insurance for all physicians of the country. In England, Germany, Yugoslavia and Greece there are as yet no similar organizations.

In Rumania, two methods are open: either to contract with an insurance company on highly advantageous terms or to establish an independent old age pension and invalidity organization. The government promised to aid with considerable money the latter plan, and the majority of Rumanian physi-

cians are in favor of it. The regulations have already been compiled and approved by the government. The income of this association will be derived from the following sources: The National Medical Association has donated 1,500,000 lei in stock. The income will originate from (1) the proceeds of the sale of prescription blanks (the pension office will issue prescription blanks, the use of which will be obligatory, a certain part of the sale price being allotted to the pension fund); (2) the registration fees paid by members; (3) various subsidies, donations, balls and concerts; (4) contributions by the medical chambers; (5) grants from the Rumanian Medical Association; (6) 0.5 per cent of the net income of all sanatoriums, private hospitals and radiographic laboratories.

To be entitled to a pension, a member must be 60 years of age and at least twenty years in medical practice, and have paid the member fees regularly. The widow of a member and the legitimate children of a deceased member, if they are under 18 years of age, also are eligible to receive assistance. This age limit is extended to 21 if the child is a university student. Any physician applying for an old age pension has to produce a certificate showing that he has been removed from the register of practitioners.

The chamber of deputies will discuss the bill in September and the pension association will begin functioning in October.

A New Law to Prevent Venereal Diseases

The *Monitorul Oficial*, the official gazette, published, March 3, the new law on the prevention of venereal diseases. The law prescribes that venereal diseases shall be treated only by qualified medical practitioners. All other persons commit the offense of quackery, if they treat such patients. All attending physicians have to make out a report, placed at their disposal by the magistrates, for every patient, registering the treatment given and the progress. If patients do not come regularly, the physician is obliged to report this to the magistrate, which places them under his control, and he may intern them in a hospital as long as they are infectious. A drastic feature of the law is that venereal patients, if they knowingly infect anybody, are liable to imprisonment from three months to one year. In cases of new infections, the physician is obliged to find the source of infection. Patients under legal age (21 and 18, respectively) have to be treated at the expense of the parents. Hospitals, polyclinics and village district physicians are obliged to treat all venereal patients free of charge, their bill to be paid by the state. Chemists who sell drugs to such patients without medical prescriptions commit the offense of quackery and will be prosecuted. Persons and institutions recommending or selling to such patients "miraculous" or "secret" medicines are liable to a fine ranging from 5,000 to 50,000 lei. Physicians must enlighten their patients on the consequences of spreading the disease. The ministry of public health provides all venereal specialists with instructions to be distributed among venereal patients. The law also contains paragraphs against secret prostitution.

Marriages

EDWARD BINNEY LANE, Boston, to Miss Ida Niles Southcombe of Jamaica Plain, Mass., May 31.

IRVING G. FUHR to Miss Henrietta Bearman, both of Brooklyn, March 19.

HUBERT A. BARGE to Miss Drucilla Albrest, both of Miami, Fla., June 1.

JOHN R. EGGLESTON, Decatur, Ala., to Miss Betty Brewer, March 10.

MEYER S. FOX to Miss Sylvia Meyer, both of Milwaukee, May 14.

Deaths

Alexander Brown Dancy, Jackson, Tenn.; University of Louisville (Ky.) School of Medicine, 1900; Vanderbilt University School of Medicine, Nashville Tenn., 1902; member of the Tennessee State Medical Association, and the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; president of the Mid-South Post Graduate Medical Association; councilor of the Eighth District, Tennessee State Medical Association; on the staffs of the Crook Sanatorium, Memorial Hospital and the Webb-Williamson Hospital; aged 54; died, June 10, of heart disease.

Frank Warren Langdon, Cincinnati; Miami Medical College, Cincinnati, 1881; chairman of the Section on Nervous and Mental Diseases, American Medical Association, 1902-1903; member of the American Psychiatric Association and the Association for Research in Nervous and Mental Diseases; emeritus professor of psychiatry, University of Cincinnati College of Medicine; past president of the Cincinnati Academy of Medicine and the Cincinnati Neurological Society; aged 80; died, June 9, of bronchopneumonia.

Claude Wallop Colonna * Surg., Lieut., Commander, U. S. Navy, retired, San Francisco; Medical College of Virginia, Richmond, 1917; fellow of the American College of Surgeons; entered the navy in 1917; served during the World War; retired in 1927 for incapacity resulting from an incident of service; aged 39; died, May 14, at the U. S. Naval Hospital, Mare Island, Calif., of chronic pulmonary tuberculosis.

Roland E. Loucks * Detroit; Medical Faculty of Trinity University, Toronto, 1903; fellow of the American College of Physicians; member of the Radiological Society of North America, American College of Radiology and the American Radium Society; owner of the Memorial Hospital; on the staffs of the Harper, Grace and Receiving hospitals; aged 63; died, June 5, of heart disease.

Thomas Teasdale Church * Salem, Ohio; Homeopathic Hospital College, Cleveland, 1882; member of the Associated Anesthetists of the United States and Canada; secretary of the Columbiana County Medical Society; city and county health officer; on the staff of the Salem City Hospital; aged 72; died suddenly, May 27, at the Cleveland (Ohio) Clinic Hospital, of cerebral embolism.

John Joseph Meany * Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; Fellow of the American College of Surgeons; attending surgeon to the West Suburban Hospital, Oak Park, Ill.; aged 54; died, June 7, of angina pectoris.

Theodore Martin Wiersen, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; aged 55; died, June 1, of hemorrhage due to carcinoma of the stomach.

Louis Isidor Breitstein * San Francisco; University of California Medical Department, 1903; assistant clinical professor of obstetrics and gynecology at his alma mater; on the staff of the Mount Zion Hospital; aged 54; died, May 19, in Silver City, Nev., of heart disease.

Richard Cartwright, Salem, Ore.; Chicago Homeopathic Medical College, 1882; Willamette University Medical Department, Salem, 1898; Hahnemann Medical College and Hospital, Chicago, 1905; aged 81; died, May 14, of chronic myocarditis, arteriosclerosis and nephritis.

Charles Alonzo Dorr, Hingham, Mass.; Dartmouth Medical School, Hanover, 1878; member of the Massachusetts Medical Society; formerly member of the school committee and board of health; aged 82; died, May 27, of diabetes mellitus and myocarditis.

George Worth Bence, Greencastle, Ind.; University of Virginia Department of Medicine, Charlottesville, 1871; formerly member of the state legislature; for twenty-two years secretary of the county board of health; aged 86; died, June 1, of angina pectoris.

James H. Kennerly, Batesville, Ark.; University of Louisville (Ky.) School of Medicine, 1876; member of the Arkansas Medical Society; formerly county health officer and health officer of Batesville; aged 84; died, May 13, of nephritis and arteriosclerosis.

Benjamin F. Ochs * New York; College of Physicians and Surgeons, Medical Department of Columbia College, 1886;

* Indicates "Fellow" of the American Medical Association.

on the staffs of the Fordham Hospital and the Rockaway Beach (N. Y.) Hospital; aged 70; died, May 25, of coronary sclerosis.

Bernard Benjamin Harrison Aarons, Philadelphia; Medico-Chirurgical College of Philadelphia, 1912; member of the Medical Society of the State of Pennsylvania; police surgeon; aged 43; died, May 28, of a self-inflicted bullet wound.

Frank Irving Brown, South Portland, Maine; Medical School of Maine, Portland, 1891; member of the Maine Medical Association; for many years member of the school board; aged 73; died, May 28, of myocarditis and chronic myocarditis.

Jonathan Perry Wolf \oplus Evansville, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the Associated Anesthetists of the United States and Canada; on the staff of St. Mary's Hospital; aged 57; died, June 1, of heart disease.

William H. Tucker, Bradner, Ohio; Ohio Medical University, Columbus, 1900; member of the Ohio State Medical Association; aged 64; died, May 27, in the Community Hospital, Fremont, of heart disease and diabetes mellitus.

Henry C. Lyman, Norwich, N. Y.; University of the City of New York Medical Department, 1872; member of the Medical Society of the State of New York; aged 85; died, May 26, of chronic interstitial nephritis.

Samuel A. Weisenberg \oplus Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1898; aged 56; died, May 17, of coronary sclerosis, angina pectoris and arteriosclerosis.

Charles Henry Colgate \oplus Rockland, Mass.; Boston University School of Medicine, 1901; served during the World War; aged 59; died, June 4, of heart disease, while trying to rescue a girl from drowning.

John Dexter Lyon \oplus Minneapolis; Northwestern University Medical School, Chicago, 1904; on the staffs of St. Barnabas Hospital and the Asbury Hospital; aged 58; died, May 29, of coronary disease.

Thomas B. Williams, South Euclid, Ohio; Western Reserve University Medical Department, Cleveland, 1882; member of the Ohio State Medical Association; aged 84; died, May 24, of myocarditis.

Jonathan Pearson, Niagara Falls, N. Y.; Albany Medical College, 1915; formerly member of the state board of health; served during the World War; aged 45; died, May 17, of cerebral hemorrhage.

David T. Martyn, Columbus, Neb.; Northwestern University Medical School, Chicago, 1869; member of the Nebraska State Medical Association; Civil War veteran; aged 87; died, April 28, of senility.

John W. Naylor, Cayce, Ky.; University of Louisville School of Medicine, 1887; for many years member of the county board of health; aged 67; died, May 7, of malignant tumor of the throat.

F. H. Robinson, Delphi, Ind.; Pulte Medical College, Cincinnati, 1881; member of the Indiana State Medical Association; formerly mayor of Delphi; aged 73; died suddenly, May 27, of heart disease.

Amzi Wallace Rudisill, Memphis, Tenn.; Memphis Hospital Medical College, 1891; member of the Tennessee State Medical Association; aged 64; died, May 11, of chronic nephritis and hypertension.

Earl Green \oplus Mount Vernon, Ill.; Bellevue Hospital Medical College, New York, 1884; aged 72; died, June 3, in the Mount Vernon Hospital, following a prostatectomy for prostatic hypertrophy.

Ernst G. Zimmer, Upland, Ind.; Cincinnati College of Medicine and Surgery, 1886; member of the Indiana State Medical Association; aged 75; died, May 30, of cerebral hemorrhage.

James Charles Haley, Buffalo; University of Buffalo School of Medicine, 1907; aged 53; died, May 23, in East Aurora, N. Y., of acute dilatation of the heart and mitral insufficiency.

James L. Ridgely, Baltimore; University of Maryland School of Medicine, Baltimore, 1888; for many years member of the city health department; aged 65; died, May 25, of myocarditis.

James Henry Jackson, Center Ridge, Ark.; Arkansas Industrial University Medical Department, Little Rock, 1891; aged 73; died, May 13, in a hospital at Morrilton, of acute myocarditis.

Alfred Henry Albert Mayer \oplus Baltimore; Julius-Maximilians-Universität Medizinische Fakultät, Würzburg, Bavaria, Germany, 1887; aged 68; died, May 15, of carcinoma of the lung.

Conrad Georg, Sr. \oplus Ann Arbor, Mich.; University of Michigan Medical School, Ann Arbor, 1872; formerly city health officer and coroner; aged 85; died, May 29, of arteriosclerosis.

William H. Merritt, Pleasantville, Iowa; College of Physicians and Surgeons, Keokuk, 1877; member of the Iowa State Medical Society; aged 81; died, May 31, of carcinoma of the stomach.

Elijah Robert Blalock, New Concord, Ky.; University of Louisville School of Medicine, 1905; member of the Kentucky State Medical Association; aged 54; died, May 23, of heart disease.

Eugene G. Regennas \oplus Hope, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1886; also a dentist; aged 80; died, May 26, of a tumor of the spleen and chronic cystitis.

William R. Vaupell, La Porte, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1894; aged 71; died, April 29, of multiple sclerosis.

John J. Baumann, Jersey City, N. J.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1887; aged 71; died, May 20, of Parkinson's disease.

Henry A. Wilson \oplus Bowdill, Ohio; Western University Faculty of Medicine, London, Ont., Canada, 1891; aged 66; died, June 1, of pleurisy and pneumonia, following an accident.

Golan Sampson Perry, Raleigh, N. C.; Howard University College of Medicine, Washington, D. C., 1918; aged 42; died, May 28, in St. Agnes' Hospital, of cerebral hemorrhage.

Arthur Linwood Brown \oplus Winchester, Mass.; Tufts College Medical School, Boston, 1908; on the staff of the Winchester Hospital; aged 63; died, May 15, of heart disease.

Ira Morris Comstock \oplus New York Mills, N. Y.; University of the City of New York Medical Department, 1879; aged 77; died, May 10, of arteriosclerosis and nephritis.

George Hopkinson, Boston; Harvard University Medical School, Boston, 1905; member of the Massachusetts Medical Society; aged 59; died, May 26, of coronary thrombosis.

Tobe Turner Webb, Laynesville, Ky.; University of Louisville (Ky.) School of Medicine, 1909; aged 53; died suddenly, May 19, of cerebral hemorrhage and arteriosclerosis.

David R. Griffith, Creighton, Mo.; Kansas City Medical College, 1882; member of the Missouri State Medical Association; aged 79; died, March 22, of general debility.

James D. Smith, Benton, Ill.; American Medical College, St. Louis, 1879; member of the Illinois State Medical Society; aged 94; died, May 19, of an injury to the hip.

Julian O. Terrill, Wichita, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 75; died, April 28, in a hospital at Topeka, of arteriosclerosis.

Charles Deletang Ebann, Cambridge, Mass.; Tufts College Medical School, Boston, 1894; aged 77; died, May 16, of chronic myocarditis and arteriosclerosis.

William H. Farrington, Raubsville, Pa.; Bellevue Hospital Medical College, New York, 1873; aged 84; died, May 18, of arteriosclerosis and bronchopneumonia.

John Martin Glover, Stapleton, Ga.; University of Georgia Medical Department, Augusta, 1887; aged 73; died, March 11, of cerebral and coronary thrombosis.

Andrew C. Enochs, Oklahoma City; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; aged 74; died, May 17, of cerebral hemorrhage.

W. M. Brand, Springdale, Ark. (licensed, Arkansas, 1903); member of the Arkansas Medical Society; aged 50; died, May 15, of cerebral hemorrhage.

Edward John Ziegler, New Madison, Ohio; Rush Medical College, Chicago, 1882; aged 75; died, May 13, of chronic myocarditis and nephritis.

Andrew D. Steele, Perryville, Mo.; Washington University School of Medicine, St. Louis, 1896; aged 64; died, May 17, of angina pectoris.

Frank Douglas Davenport \oplus Winterset, Iowa; Eclectic Medical Institute, Cincinnati, 1887; aged 69; died, May 22, of angina pectoris.

Ira Bayard Hamblin \oplus Columbus, Ohio; Medical College of Ohio, Cincinnati, 1884; aged 76; died, May 25, of cerebral hemorrhage.

Eugen Le Sage, Medford, Wis.; Louisville (Ky.) Medical College, 1878; aged 85; died, May 11, of chronic myocarditis.

Schuyler O. Giffin, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1886; aged 72; died, June 3, of heart disease.

Bureau of Investigation

THE "PATENT MEDICINE" BIG STICK

Are the Nostrum Makers Going Back to Their Old Tricks?

Those physicians who remember the evils of the nostrum traffic of thirty years ago will recall some of the methods used by the organized "patent medicine" interests to club newspapers into submission and to prevent, so far as possible, any information reaching the public that might be considered inimical to the "patent medicine" business. There was the notorious "red clause" which was part of so many "patent medicine" advertising contracts and which read:

"It is mutually agreed that this contract is void if any law is enacted by your state restricting or prohibiting the manufacture or sale of proprietary medicines."

There was the even more iniquitous clause in the advertising contracts which permitted the "patent medicine" concern to cancel its contract if any matter that nostrum makers considered detrimental to their interests was "permitted to appear in the reading columns or elsewhere" in the paper.

Following the publicity that was given to this "patent medicine" conspiracy against the freedom of the press, by Samuel Hopkins Adams' articles in *Collier's* and by the hundreds of thousands of reprints of those articles sent out by the American Medical Association, these clauses disappeared from "patent medicine" advertising contracts. It would appear, however, from a recent happening, that the nostrum interests are again up to their old tricks.

Dr. Stanley W. Sayer, District State Health Officer at Gouverneur, N. Y., recently delivered a short radio talk over Station WCAD at Canton, N. Y. The subject of the talk was "Patent Medicine Testimonials." The *Malone (N. Y.) Farmer*, published at Malone, N. Y., printed in full Dr. Sayer's radio talk. The radio talk started out with this statement:

"The reputable manufacturer of worth while products does not find it necessary to resort to extravagant ballyhoo. A good article can be sold on its real merits, or at least will not need continued high pressure salesmanship. It is well to beware of any medical preparation that is almost entirely recommended by testimonials."

Dr. Sayer then went on to call the attention of his hearers to the difference between the claims made in "patent medicine" advertising literature or in "patent medicine" radio broadcasts and the statements that are made on the trade package—the latter being subject to the penalties of the National Food and Drugs Act. He referred, also, to the "lurid testimonials" that are used by certain "patent medicine" concerns to bolster up the claims for their products; he referred to the "European specialists" and others of supposed financial or political standing who give testimonials. Dr. Sayer also referred to the notorious consumption cure that was declared a fraud some months ago in the federal courts, and recalled that it was brought out in that case that a testimonial had been given by a woman stating that she was cured of tuberculosis, when, as a matter of fact, she died of the disease, while the woman's son continued to reply to letters, confirming the statement of a cure and signing his mother's name. In closing his talk, Dr. Sayer emphasized the fact brought out by Samuel Hopkins Adams some years ago, that prospective buyers should ask three questions regarding every "patent medicine" testimonial: (1) Who gives it? (2) What does he say? (3) Why does he say it?

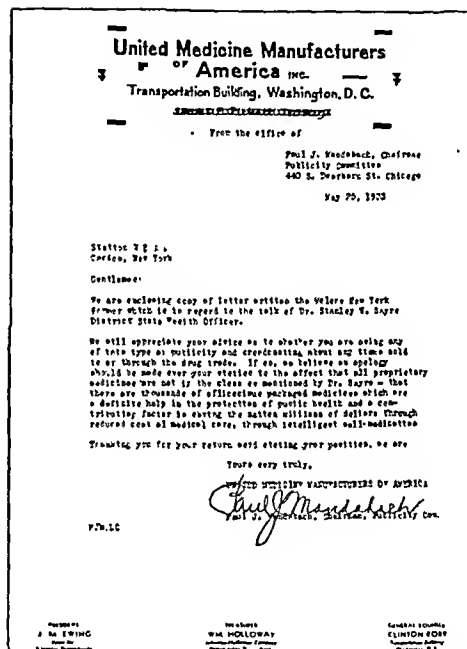
As already stated, this talk of Dr. Sayer's was published in full in the *Malone Farmer* for May 17, 1933. On May 25, 1933, the United Medicine Manufacturers of America, Inc., with offices at Washington, D. C., sent out two letters signed by Paul J. Mandabach, Chairman of their Publicity Committee, who has his headquarters in Chicago; one letter was to Station WCAD and the other letter went to the *Malone Farmer*. We reproduce in miniature Mr. Mandabach's letter to the radio station. It will be noted that Mr. Mandabach encloses with his

letter to the radio station a copy of his letter to the *Malone Farmer*. Mr. Mandabach goes on to state that if Station WCAD is broadcasting "any items sold to or through the drug trade," he believes that an apology should be made by the radio station to the effect that all proprietary medicines are not in the class mentioned by Dr. Sayer. As Dr. Sayer specifically prefixed his entire talk with a statement that made it clear that he was referring, not to "the reputable manufacturer of worth-while products," but to the other kind, it would appear that Mr. Mandabach was speaking in the interest of the other kind.

More interesting than the letter from the publicity man of the United Medicine Manufacturers of America, Inc., to the radio station is the letter from the same individual to the *Malone Farmer*. This letter read in part as follows:

"We note from clipping of your paper of Wednesday, May 17th, an article 'Patent Medicine Testimonials are Broadcast Topic.'

"As such publicity is detrimental to the reputable manufacturers as the article does not differentiate between the reputable manufacturers who are obeying the law and doing a real service for humanity and the type of manufacturer referred to, our organization resents this publicity and will appreciate your position hereon. . . ."



Photographic facsimile (greatly reduced) of a letter written by the publicity department of the United Medicine Manufacturers of America, Inc., to radio station WCAD, following a public health talk given by a state health officer on "patent medicine" testimonials of a disreputable kind.

Then follow two paragraphs in which it is stated that there are doctors who are unethical and calling attention to a recent newspaper report of a woman who was accusing a surgeon and a hospital of leaving a piece of gauze in her abdomen. It then closes with this statement:

"If you are printing any medicine advertising, or if you want any in the future [Italics ours.—Ed.], we believe that the square shooting manufacturers of proprietary medicines are entitled to an apology in your columns, stating that said article does not refer to all medicines but only to a few."

The threat contained in the paragraph just quoted is obvious. The implication is inescapable that if the *Malone Farmer* is carrying any "patent medicine" advertising or wants to carry any in the future, it should see to it, in the words of the old "patent medicine" advertising contract, that nothing "is permitted to appear in the reading columns or elsewhere in this paper" that may tend to awaken a public distrust in "patent medicines." Just what "patent medicine" concerns are members of the United Medicine Manufacturers of America, Inc., we do not know. We do know that last November Columbus, Ohio, newspapers carried a report that the Board of Managers

of the United Medicine Manufacturers of America, Inc., had met in that city and listed among those attending the meeting the following:

- "Warren Burgess, President of the *Kuor Company*, Kansas City, Mo.
"William Holloway, President of the *Johnston-Holloway Company*, Philadelphia.
"I. R. Blackburn, President of the *Blackburn Products Company*, Dayton, Ohio.
"K. D. Muir of the *Muir Laboratories*, Grand Rapids, Mich.
"Fred C. Arner, President of the *Arner Company*, Buffalo, N. Y.
"J. B. Van Dyke, President of the *Van Dyke Chemical Company*, Philadelphia.
"Dr. Eugene L. Maines of the *Smith, Kline and French Laboratories*, Philadelphia.
"John P. Nicodemus of the *Flazo Company*, Saginaw, Mich."

It would be interesting to know whether these gentlemen and the companies that they represent consider themselves "reputable manufacturers of worth while products" to which Dr. Sayer implied that he was *not* referring, or manufacturers who do use "lurid testimonials" and whose products are sold under claims that appear in the collateral advertising that do not appear on or in the trade package.

Correspondence

APOMORPHINE AS AN ANTIDOTE TO STRYCHNINE POISONING

To the Editor:—In THE JOURNAL, May 20, page 1589, appeared an article by David and Harry Gold, entitled "Apomorphine as an Antidote to Strychnine Poisoning," in which several references were made to a paper by us (THE JOURNAL, April 2, 1932, p. 1133). The authors take exception to our experiments showing that apomorphine tends to counteract the effects of strychnine in doses somewhat less than twice the lethal. In our paper we pointed out clearly that apomorphine is not a true antagonist to strychnine and recommended in strychnine poisoning the much more effective and true antidote phenobarbital sodium. But our demonstration of the superiority of the barbiturates to apomorphine and the further demonstration of the ineffectiveness of magnesium sulphate does not alter the validity of our experiments on apomorphine. The barbiturates, as has been fully confirmed, save life, after administration of approximately five times the lethal dose of strychnine; apomorphine, on the contrary, saves only after approximately twice the lethal amount of strychnine, a fact which we clearly demonstrated with rats as the experimental animals.

Careful reading of the table presented by the Golds does not seem to us to invalidate our contentions. They administered to dogs 7 mg. of strychnine sulphate per kilogram. The dogs that did not receive apomorphine died. To six dogs they gave apomorphine as well as strychnine; two of the dogs lived.

It appears to us that the experiments of the Golds tend rather to support our conclusion than their own.

HOWARD W. HAGGARD, M.D.,
LEON A. GREENBERG, Ph.B.,
New Haven, Conn.

[The letter was referred to Dr. Gold, who replies:]

The defense by Haggard and Greenberg of their experiments with rats, with the barbiturates, and with magnesium is entirely beside the point because it has nothing to do with the substance of our paper. Our paper deals solely with the antagonism between apomorphine and strychnine which Haggard and Greenberg alleged applies to the dog.

Their conclusion regarding the effectiveness of apomorphine in protecting against more than a single fatal dose of strychnine in the dog is based only on the recovery of two dogs. This is hardly sufficient to justify the conclusion in regard to dogs,

irrespective of any support it may receive from experiments on rats.

The bald statements in their letter: "The dogs that did not receive apomorphine died. To six dogs they gave apomorphine as well as strychnine; two of the dogs lived," present as far as they go a statistical summary of our experiments, but it is incomplete and misleading. Four of the six dogs that received both drugs died without showing even a semblance of protection by apomorphine. A question of interpretation arose in the case of only one dog. We pointed out in our paper that in this case there seemed to be an antagonism between the two drugs, because the animal recovered from 0.7 mg. strychnine when given apomorphine as well and died from a similar dose of strychnine without the apomorphine subsequently, but that this interpretation was vitiated by the discovery in another case that a dog may recover from 0.7 mg. strychnine and die from a similar dose at another time even though it received apomorphine in both instances.

Their statement that "the experiments of the Golds tend rather to support our conclusion than their own" is therefore based on the recovery of only one dog under the circumstances stated. Further comment about this seems hardly necessary.

Their letter refers to "7 mg." of strychnine. That, in our paper, is 0.7 mg.

HARRY GOLD, New York.

PERMANENT ENLARGEMENT OF THE LIPS AND FACE

To the Editor:—Referring to the communication by Dr. Pusey (THE JOURNAL, May 20, p. 1626), I feel that I should reply, for it is apparent that Dr. Pusey failed to recognize the entity that Dr. Kirch and I described (THE JOURNAL, April 22, p. 1230).

The condition to which Dr. Pusey referred, and which is secondary to erysipelas and lymphangitis, is indeed well known to the medical profession in general, and to Dr. Kirch and me, for we have seen many such cases at the Mayo Clinic.

We have given surgical treatment for the condition which we described, and the fact that the responsibility for the results of such treatment would rest directly on us has made us particularly careful to exclude cases in which the condition had originated with erysipelas or lymphangitis. Nevertheless, we have not been so self confident as to proceed to surgical treatment without having first obtained the opinion of the dermatologists and, in the cases of facial palsy, of the neurologists. There has been the closest cooperation in consultation, and accord in diagnosis, among us, Dr. O'Leary of the Section on Dermatology, and Dr. Shelden of the Section on Neurology. Dr. Shelden presented the neurologic features of this entity at the meeting of the American Neurological Association, May 8, at Washington, D. C.

Obviously, our evidence need not all be given again in this note. But if the entity has once been seen it can be identified again by the typical history, which is similar in some respects to that of angioneurotic edema and distinctly different in other respects, by the course of the disease, by the soft residual enlargement, and by the facial paralysis. These features make the condition we described readily distinguishable from the swelling of the face produced by inflammatory causes. We know of no case of swelling of the face, of the types under discussion, consequent to an inflammatory disease, in which there has been facial paralysis.

Results of treatment in the condition we described have been good, whereas results of treatment of enlargements of the face caused by erysipelas and lymphangitis, according to both Dr. Pusey and Dr. O'Leary, are less satisfactory.

Our cases have been carefully selected over a period of twenty-two years with the cooperation of the members of the

staff we have named, as well as with others, and since Dr. Pusey did not cite any literature with which we are unacquainted, we cannot but adhere to the conviction that we have added another type of permanent enlargement of the lips and face to those which the members of the medical profession have recognized for many years, and that we have demonstrated an efficient treatment for it.

GORDON B. NEW, M.D., Rochester, Minn.

[A copy of Dr. New's letter was sent to Dr. Pusey, who replies:]

To the Editor:—I am still unconvinced. The cases which Dr. New produces, excepting only the minor number accompanied by facial palsy, are indistinguishable by any points that he has brought out in either of his communications from the solid edema described by Hutchinson fifty years ago. Nowhere has he indicated any consideration of previous literature on the subject, except to say that he is not unacquainted with it. If he is going to establish his condition as a new entity he should show wherein the new one differs from that which will occur to all those familiar with the subject when he reads the paper. He has not yet attempted even to prove his case. It cannot be accepted on the *ex cathedra* statement that it is different. I still think that he is dealing with Hutchinson's solid edema of the face.

WILLIAM ALLEN PUSEY, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VITAMIN D MILK

To the Editor:—Can you inform me about the use, preparation and dependability of vitamin D milk? Is it a satisfactory substitute for cod liver oil?

M.D., Connecticut.

ANSWER.—Vitamin D is the food factor that promotes the proper assimilation of calcium and phosphorus, the two inorganic constituents of bone. Therefore it is often called the antirachitic vitamin. It has been designated the "sunshine vitamin" because its effects are comparable, as an antirachitic, to those of exposure to the sun's rays or corresponding ultraviolet radiation. The need of vitamin D is greatest during the period of childhood. Recent studies on dental caries, though far from convincing, have raised the question whether the rôle of vitamin D in the protection of the teeth may not bring it into significance in the nutrition of adults as well as of children.

The widespread occurrence of rickets under conditions of living in temperate climates has emphasized the need of better prophylactic and curative measures. Hence it has become customary to attempt to insure proper antirachitic effects by supplementing the usual diet with potent sources of vitamin D or its equivalent in exposure to ultraviolet rays. As milk is the dominant food of the young, effort has been made to enhance the antirachitic potency of nature's "most nearly perfect food" in various ways. This has created much interest among dairymen as well as physicians and even the general public.

A recent publication of the Ohio Agricultural Experiment Station at Wooster (*Bimonthly Bulletin*, 18, May-June, 1933) summarizes the current methods of producing vitamin D milk: (1) by feeding irradiated yeast to cows, (2) by adding a cod liver oil concentrate directly to milk, (3) by irradiating milk (that is, subjecting it to ultraviolet rays). The first method has been in use for the longest time and consequently its use is spread over a larger area than is either of the other two methods. Use of the second method is steadily increasing, whereas irradiated liquid milk is just beginning to appear on the market. Various "brands" of vitamin D milk have already been accepted for recognition by the Committee on Foods of the American Medical Association. The Ohio bulletin, by Drs. Krauss and Bethke, presents the present status of the subject:

The production of vitamin D milk by the irradiated yeast method is accomplished by feeding cows irradiated yeast. The

amount of yeast fed daily is based on the production of the cows. The yeast may be fed to each cow separately or it may be included in the regular grain mixture. Milk from cows fed the proper amount of irradiated yeast will contain about 160 Steenbock rat units of vitamin D per quart of 4 per cent milk. Such milk has been fed to children and has been found to be effective in preventing or curing rickets. The chief advantage of this system of producing vitamin D milk lies in the fact that when the milk leaves the cow it contains the required amount of vitamin D and no further "tampering" is needed. One disadvantage of this method is that there is no assurance that the yeast will be fed faithfully from day to day. The chief disadvantage of this method lies in its inefficiency. Only a small percentage of the total number of rat units of vitamin D fed to the cows is recovered in the milk.

The addition of concentrates containing vitamin D consists in adding a prescribed amount of specially prepared concentrate, so that the resulting product contains about 150 Steenbock rat units of vitamin D per quart. The greatest advantage of this system lies in its efficiency. There is no waste, and a large amount of milk can be treated at one time in the milk plant. One disadvantage is that there is no assurance that the correct amount of supplement has been added to the milk. Another disadvantage of this method is psychologic. The fact that something has been added to the milk after it was produced does not lend itself well to sales appeal.

It is now possible to impart a potency of 50 Steenbock rat units per quart to milk by irradiation, without affecting the taste or destroying any of the nutritive properties of the milk. This is accomplished by exposing for a few seconds a very thin film of milk to the rays from flaming carbon arc lamps. Milk so treated has been shown clinically to be effective in the treatment of rickets. Specially built apparatus is employed, the nature of the set-up being varied according to the needs of the particular situation. The advantage of this method lies chiefly in the ultimate low cost per quart of milk. The method has the further advantage of eliminating to a greater extent the human element of error that enters into the other two methods. The amount of radiant energy imparted to the milk can be accurately recorded by means of ultraviolet ray meters, which may be used in much the same capacity as recording thermometers are used in pasteurization.

The general conclusions of the Ohio experts are important: "Assuming that the principle of vitamin D milk is sound and that satisfactory methods for producing such milk are now available, there remains the problem of control. What assurance does the consumer have that the milk purchased as vitamin D milk contains the specified amount of vitamin D? To determine the amount of this factor in a given sample of milk is a laborious and time-consuming procedure. A given plant could hardly afford to have its milk assayed for vitamin D more than once a month and small producers would find even this an expensive procedure. Unfortunately, no reliable chemical methods are yet available for determining the amount of vitamin D in foods. Assurance that the milk will measure up from day to day to the standards set must rest largely on confidence in those responsible for vitamin D milk production. Careful selection of licensees, reasonable supervision, and frequent assays should also be expected."

DANGERS TO HEALTH FROM CRESOL FUMES

To the Editor:—I should like to have the opinion of your research department as to whether or not the fumes from hot cresol and tricresyl phosphate would be injurious to the health of any one working in this mixture, whether or not the worker would be injured by the vapor coming off from a heated tank of 35 per cent cresol and 65 per cent tricresyl phosphate, and whether there would be any toxic effect if the worker got this on the skin. Of course, I know that the physiologic action is much the same as that of phenol and that the tricresyl phosphate caused what is known as ginger paralysis in the West and South in 1930-1931, so there is no doubt about its effect if taken internally; but what I want to know is whether workers could be injured from inhaling the vapor of the hot cresol or could absorb it through the skin in sufficient quantities to cause poisoning. Do you know whether investigation has been made with hot cresol along this line?

WILLIAM L. TRACY, M.D., Pittsfield, Mass.

ANSWER.—The cresols, like phenol, are readily absorbed from the intact skin and all mucous membranes. The boiling point of the cresols ranges from about 190 to 200 C. Chronic cresol poisoning from the continuous absorption of its vapors is possible if the temperature is high enough to cause its volatilization.

Technical tricresyl phosphate, which is usually a mixture of the ortho, meta and para isomers, is a relatively nonvolatile substance. The ortho and meta isomers boil at about 220 to 230 C. at much reduced pressure. At atmospheric pressure they decompose before boiling. Poisoning from tricresyl phosphate

as such through absorption of its vapors is therefore unlikely. Tricresyl phosphate poisoning through absorption of the ortho isomer from the skin, however, is possible, as this has recently been shown in animals by E. Gross and A. Grosse (*Arch. f. exper. Path. u. Pharmacol.* 168:473, 1932).

WEIGHT BEARING AFTER FRACTURE OF ASTRAGALUS

To the Editor:—I should like to know when to begin active and passive motion and when to allow weight bearing in a fracture of the astragalus of the left foot. Please omit name. M.D., New York.

ANSWER.—It is impossible to state in number of days or weeks when it is permissible to allow weight bearing in fracture of the astragalus. One must be guided by the type of fracture, the degree of reduction and the general condition of the foot and ankle.

A simple test of the efficiency of this foot can be made by allowing the patient to be on crutches with the affected foot protected. Before weight bearing is permitted, the patient should be allowed simply to touch the foot to the floor and "feel out" his ability to bear weight. All these patients should have protected weight bearing, using a cast or brace, and at a later date a proper shoe with a support that is rigid at first and later changed to a resilient one.

Just as soon as massage and active motions are not attended by unusual risk of displacing fragments, they should be started; at the same time, contrast applications of warm and cool sprays should be prescribed.

In cases of fracture of the astragalus, there is danger of developing traumatic arthritis involving the ankle joint and the subastragalar joint. For these reasons, motion should be instituted as early as is consistent with local conditions. It is important to mold the fragments and mold the ankle to its normal contours. The astragalus is a bone that occupies a unique position in the foot in that it is the mortise bone at the ankle. It has the entire superincumbent weight of the body, it is involved in flexion, dorsiflexion and plantar flexion, and it has no muscles attached to it.

The astragalus articulates with the tibia, fibula and scaphoid and with the os calcis in three places; it cannot move itself because it has no muscle attachments; it is subjected to more superincumbent weight than any other bone in the body.

If the astragalus is tilted, there is danger of varus or valgus foot, which may cause considerable trouble.

CALCIFICATION OF AURICLE

To the Editor:—What has been determined as the cause of calcification of the auricle in a young adult? What treatment is advised? Is it due to some endocrine disturbance? M.D., Milwaukee.

ANSWER.—Calcification of the auricle in a young adult is rare; it is generally the result of an extension of a chronic pericarditis into the tissue of the wall of the heart. In such cases the lime salts may be laid down both in the pericardium and in the heart itself. The most common causes of such pericarditis are (1) tuberculous infection and (2) massive involvement of the pleura and pericardium in the form of mediastinopericarditis, which may be associated with a severe pneumonia. Myocardial and endocardial lesions themselves may be the sites for the deposition of calcium, but of course most of the calcium resulting from endocarditis is found at the aortic or mitral valve, while in the myocardium infarction is the chief cause, located in the ventricles most commonly. J. G. Mönckeberg (in Henke and Lubarsch's *Handbuch der speziellen pathologischen Anatomie und Histologie*, vol. II, pp. 406-409) gives an interesting description of the two types of myocardial calcification, that laid down in previously damaged muscle and that called calcium metastases, in which a disorder of calcium metabolism is responsible primarily. He does not specifically mention calcification of the auricle.

The rare condition of hyperparathyroidism is associated with hypercalcemia and a tendency to deposition of calcium in the tissues. Wilhelm Hueper (*Arch. Path.* 3:14 [Jan.] 1927) reported metastatic calcification in various organs, including the heart muscle, experimentally in dogs on the administration of parathyroid extract. An interesting article by A. W. Ham (*Mechanism of Calcification in the Heart and Aorta in Hypervitaminosis D*, *Arch. Path.* 14:613 [Nov.] 1932) states that "enormous single doses of irradiated ergosterol will produce massive calcifications in the aorta, coronary vessels and cardiac musculature of the rat as soon as forty-eight hours after administration. Sections from the tissues twenty-four hours after administration show nothing that would presage such an imminent catastrophe, so that the calcifications do not appear

to depend on degenerative changes in the recipient tissues. On the other hand, the rapidity of formation, together with the massiveness of the calcifications, suggests very strongly that the prime factor in their causation is the inability of the serum to retain all its calcium in solution. It is suggested that precipitation depends on saturation of the serum with diffusible calcium plus other factors"—such as change in carbon dioxide tension and addition of other ions which would force a precipitation of calcium salts. "A marked inflammatory cell infiltration developed about the affected coronary vessels and about the calcified areas of cardiac muscle."

Calcification of the auricle may be encountered in cases of massive chronic pericarditis or in the mitral valve and its attachments in long standing mitral stenosis.

If there is evidence of a constricting pericarditis with calcification producing the symptoms of Pick's disease in a young adult, operation to resect some of the constricting adhesions may be indicated in favorable cases.

DANISH OINTMENT—POLYSULPHIDE-ZINC OXIDE COMPOUND OINTMENT

To the Editor:—Will you kindly advise me what the prescription of Danish Ointment consists of? M.D., Oregon.

To the Editor:—Will you please inform us as to whether a preparation known as "Danish Ointment" is listed in New and Nonofficial Remedies. If so, kindly let us know the formula so that the therapeutic value of this preparation may be determined by our medical staff.

ASSISTANT SUPERINTENDENT, Hospital, New York.

To the Editor:—Please inform me where I can secure "Danish Ointment," as I have two patients who have acne rosacea and are very anxious to get relief. I notice in *THE JOURNAL* that it is recommended for either rosacea or vulgaris. M.D., New Mexico.

ANSWER.—"Danish Ointment" is an unfortunately unscientific name for a potassium polysulphide-zinc oxide compound ointment described several years ago in connection with an article on "the Danish treatment" (*THE JOURNAL*, Feb. 9, 1924, p. 466). The directions for the preparation of this ointment are as follows:

1. One kilogram of sublimed sulphur is mixed with 2 Kg. of 50 per cent solution of potassium hydroxide. Gentle heat is applied until reaction ceases and the solution becomes clear. A slight excess of sulphur may be present.

2. Petrolatum, 225 Gm., is mixed with wool fat, 225 Gm., without heat.

3. To the ointment base is added 375 Gm. of the polysulphide solution mentioned in 1.

4. To 40 Gm. of 20 per cent sodium hydroxide solution is added 28 Gm. of zinc sulphate. The mixture is agitated thoroughly until reaction ceases, poured on filter paper, and washed thoroughly; then the washed precipitate is added to the foregoing.

5. Liquid petrolatum is added to obtain a total weight of 1,000 Gm.

6. Five grams of oil of bitter almond is added to check the somewhat disagreeable sulphide odor.

VACCINATION AGAINST TYPHOID

To the Editor:—During an epidemic of typhoid, it seems customary to give prophylactic vaccination against the disease to all those who have been exposed. I have given it myself. 1. Isn't it true that the body's resistance is lowered immediately after such injections? 2. Isn't it about two or three months before one may expect protection? 3. Is there any danger of precipitating symptoms in one already infected or increasing the severity of the disease in such a person by wholesale inoculation? 4. Is there any disadvantage or contraindication to giving the "shots" at intervals of one or two days instead of the usual week or ten days? Please omit name. M.D., Louisiana.

ANSWER.—1. There is no direct evidence that this is the case, and it is generally held at present that no undesirable "negative phase" develops.

2. While the individual response varies, one can expect the protection obtained to be in effect before two or three months. If the agglutinin titer of the serum is taken as an indication of the speed of cellular sensitization, the response can be considered to begin in a few days. Quantitatively, for maximum immunization, a somewhat longer period with repeated doses is, of course, necessary.

3. No danger seems to result from such a possibility. Some workers report the advantageous use of typhoid vaccines during the incubation period, but such an effect may be nonspecific in character.

4. It is generally thought that the optimal response to as few as three injections is obtained with intervals of from seven to ten days.

GAUCHER'S DISEASE

To the Editor:—Is it possible to make a definite diagnosis of Gaucher's disease from a biopsy of liver taken during laparotomy? If so, how? Please omit name.

M.D., New York.

ANSWER.—Yes, Gaucher's disease may be recognized on microscopic examination of tissue taken from the liver during life. There is increase in the interlobular connective tissue in which lie peculiar large cells. The typical Gaucher cell is from 20 to 40 microns in diameter but may be elongated; it has one or more small nuclei, frequently eccentric; the cytoplasm is faintly acidophilic, apparently foamy or wrinkled, and contains iron but not fat or lipoids. These cells may extend into the lobule and may be found in the sinusoids of the liver as well as in the branches of the portal vein. In addition to single large cells there may be found also fused cellular masses with many nuclei. In short, the microscopic changes in the liver in Gaucher's disease are characteristic and distinctive.

ATROPHIC RHINITIS

To the Editor:—Please advise me of the latest methods of lessening and combating the odor in atrophic rhinitis. Please omit name.

M.D., Ohio.

ANSWER.—After all crusts and secretions have been removed by means of cotton tampons, either dry or moistened with hydrogen peroxide, the use of irrigations with glucose solution will often reduce the odor. Glucose may be used in the form of corn syrup, a tablespoonful to the pint of water. A 25 per cent solution of glucose in glycerin may also be used, a few drops being instilled in the nose four or five times a day. Lessening the air space in the nose and thus preventing the rapid drying of secretions may be effected by the transplantation of ivory submucously into the septum. Some men do the Lautenschlager or Halle operations, which aim at mobilizing the lateral wall of the antrum and bringing it medially as far as possible.

EPSTEIN'S MICROSACCHARIMETER

To the Editor:—Will you kindly tell me whether the microscaccharimeter, according to Dr. Albert A. Epstein, is accurate enough for routine work. I am using this apparatus with, I think, good results. Please omit name and address.

M.D., North Dakota.

ANSWER.—The accurate use of any blood sugar method depends largely on the realization of the limitations of the method. With the Epstein microscaccharimeter it is particularly important to avoid reading colors that are too concentrated; i. e., readings on specimens of blood sugar that are too high for accurate determination without dilution. There are several more recent methods for blood sugar determination that are more accurate. The simplest way to determine whether work with the saccharimeter is satisfactory is to run some parallel determinations on the same specimens of blood with the saccharimeter and one of the more recent methods. If the error is within 10 per cent, the method should do for routine clinical work.

ALLISATIN "SANDOZ"—GARLIC

To the Editor:—Can you give me any information regarding Allisatin "Sandoz," put out by the Sandoz Chemical Works, Inc., of New York, distributed by E. Fougera & Co., Inc., of New York and advertised as a remedy for hypertension?

M.D., San Diego, Calif.

ANSWER.—According to the label, Allisatin tablets are stated to contain the equivalent of 15 grains of the fresh drug (garlic). In the advertising it is stated that Allisatin is "garlic specially treated with vegetal charcoal." Thus it would seem that Allisatin is not claimed to contain anything but some preparation of garlic.

The Sandoz Chemical Works, Inc., which markets Allisatin, has not requested an examination of the product by the Council and so far the product has not been reported on by the Council or examined in the A. M. A. Chemical Laboratory.

The use of garlic as a medicine, as well as a condiment, can be traced to earliest antiquity, and periodically it has been exploited for this or that condition. Some years ago the use of garlic had a revival first in France and later in England, and then proprietary preparations claimed to be derivatives of garlic were put on the market.

Preparations of garlic have not been shown to be of value, except perhaps as irritant expectorants with local action on the stomach. The medical profession of this country appears not to have been impressed with the reported value of garlic preparations.

BENEDICT'S METHOD OF ESTIMATING BLOOD SUGAR

To the Editor:—In Queries and Minor Notes (THE JOURNAL, February 18, p. 519) it is stated that the results of estimating the blood sugar with the Folin-Wu method (J. Biol. Chem. 41: 367 [March] 1920) average 22 mg. too high. Benedict's first method, which is the one I employ, is a modification of the Folin-Wu (J. Biol. Chem. 64: 207 [May] 1925); does it, also, render high results? If so, how much too high?

JANET R. WALLACE, Medical Laboratory Technician,
Rochester, N. Y.

ANSWER.—Benedict's first copper method (J. Biol. Chem. 64: 207 [May] 1925) gives blood sugar values that are too high in normal blood by about 6 or 7 mg. per hundred cubic centimeters of blood, to judge from Benedict's data. It would appear that Benedict felt that this method fell just short of giving the true sugar (dextrose) content of the blood. For this reason he described his second copper method (J. Biol. Chem. 76: 457 [Feb.] 1928), which yields results about 22 mg. lower than the Folin-Wu method (J. Biol. Chem. 41: 367 [March] 1920), this difference being equivalent to the value for the non-dextrose reducing substances present in blood. Benedict's latest description of the second copper method appeared in the *Journal of Biological Chemistry* in June 1931 (volume 92, page 141).

BLOODY DISCHARGE FROM NIPPLE

To the Editor:—Will you kindly state the significance of a condition characterized by the issue of a few drops of blood from the nipple in a woman about 60 years of age. There is no lump or induration anywhere in the breast, and no enlargement of the cervical or axillary or sub-clavicular lymph glands. No pain, tenderness or any other symptom is referable to the breast. The patient has mild diabetes, with the blood sugar average 150, and systolic blood pressure 180. Please omit name.

M.D., Pennsylvania.

ANSWER.—A bloody discharge from the nipple is an indication of the existence of a single duct papilloma, multiple duct papillomas, or duct carcinoma. Although the absence of a palpable tumor favors the presence of a benign lesion, the possibility of early duct carcinoma cannot be excluded. Transillumination of the breast would help in localizing the lesion and determining its single or multiple nature. The age of the patient is of some value in estimating the probability of the presence of duct carcinoma. The older the patient, the more chances of the lesion being carcinoma. If transillumination reveals a single opacity in the region of the nipple and areola, a wide local surgical excision should be considered and the necessity of further treatment would be determined by the microscopic appearance of the excised specimen.

CARBON DIOXIDE TENSION OF BLOOD

To the Editor:—Is it true or not that increase of carbon dioxide tension of the blood represents a shift toward the acid end of the equilibrium? A colleague says that increased carbon dioxide tension represents alkalinity and that in acidosis the carbon dioxide is diminished. Has he not confused carbon dioxide capacity (combining power), which is, I admit, reduced in acidosis, with the fact that the excess carbon dioxide has caused consequentially this reduced carbon dioxide capacity?

ISAAC APPERMAN, M.D., New York.

ANSWER.—Increase of carbon dioxide tension of the blood may represent a shift toward the acid end of the equilibrium, provided the carbon dioxide capacity of the blood has not increased coincidentally. The carbon dioxide combining power of the blood is a measure of the basic substances that are available in the balance against the carbonic acid. The correspondent's colleague, therefore, has undoubtedly confused carbon dioxide tension with carbon dioxide capacity. But even if one were to substitute "capacity" for "tension" in his statement, it would not necessarily be true unless the carbon dioxide tension did not increase coincidentally.

HARD WATER NOT RELATED TO NEPHRITIS

To the Editor:—Is it a recognized fact that unusual hardness of an alkali water is a common and predisposing factor in the causation of pyelitis, pyelonephritis or any combination of these conditions? Please discuss preventive measures especially with regard to the use of chemically softened waters. Also briefly enumerate treatment measures for cases of this condition caused in this manner. How would you advise one to proceed in the making of a survey in a locality of this kind with reference to the need of water treating improvements and the type of treatment required, especially if one could not muster other professional interest?

FRED E. DARGATZ, M.D., Kinsley, Kan.

ANSWER.—There is no good evidence to support the theory that unusual hardness of an alkali water is a predisposing factor in the causation of pyelitis or pyelonephritis.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 11-14. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. Application should be filed before August 1. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

CALIFORNIA: Regular. San Francisco, July 10-13 and Los Angeles, July 24-27. Reciprocity. Los Angeles, July 24. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: Regular. Hartford, July 11-12. Endorsement. Hartford, July 25. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. Homeopathic. New Haven, July 11. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 10-11. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

MASSACHUSETTS: Boston, July 11-13. Sec., Dr. Stephen Rushmore, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 11-15. Sec., Mr. Charles D. Koch, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 6-7. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Watertown, July 18. Dir., Dr. P. B. Jenkins, Pierre.

WASHINGTON: Basic Science. Seattle, July 13-14. Regular. Seattle, July 17-18. Dir., Mr. Harry C. Huse, Department of Licenses, Olympia.

WEST VIRGINIA: Charleston, July 11. Sec., Dr. Arthur E. McClue, State Health Department, Charleston.

New York January-February Examination

Mr. Herbert J. Hamilton, chief, Professional Examinations Bureau, reports the written examination held by the New York State Board of Medical Examiners in Albany, Buffalo, New York and Syracuse, Jan. 30-Feb. 2, 1933. The examination covered 9 subjects and included 10 questions. An average of 75 per cent was required to pass. Two hundred and two candidates were examined, 153 of whom passed and 49 failed. The following colleges were represented:

| College | PASSED | Year Grad. | Number Passed |
|--|----------------------|------------|---------------|
| University of Colorado School of Medicine... | (1930), (1932, 2) | | 3 |
| Yale University School of Medicine..... | (1930), (1931) | | 2 |
| George Washington Univ. School of Med..... | (1931), (1932, 3) | | 4 |
| Georgetown University School of Medicine..... | (1931), (1932, 7) | | 8 |
| Howard University College of Medicine..... | (1931) | | 1 |
| Rush Medical College..... | (1928), (1932) | | 2 |
| University of Kansas School of Medicine..... | (1929), (1932) | | 2 |
| Univ. of Louisville School of Medicine..... | (1928), (1932, 3) | | 4 |
| Boston University School of Medicine..... | (1932) | | 1 |
| Harvard University Medical School..... | (1931), (1932) | | 2 |
| Tufts College Medical School..... | (1928) | | 1 |
| Univ. of Mich. Med. Sch. (1928), (1930, 2), (1931), (1932, 2) | | | 6 |
| St. Louis University School of Medicine..... | (1930), (1932, 3) | | 4 |
| Washington University School of Medicine..... | (1932) | | 1 |
| Creighton University School of Medicine..... | (1932) | | 1 |
| University of Nebraska College of Medicine..... | (1931) | | 1 |
| Albany Medical College..... | (1932, 3) | | 3 |
| Columbia University College of Physicians and Surgeons..... | (1931, 3), (1932, 4) | | 7 |
| Cornell University Med. Coll. (1918), (1928), (1931), (1932, 6) | | | 15 |
| Long Island College of Medicine..... | (1931, 6), (1932, 9) | | 15 |
| New York Homeopathic Medical College and Flower Hospital..... | (1932, 2) | | 2 |
| New York University, University and Bellevue Hospital Medical College..... | (1932, 3) | | 3 |
| Syracuse University College of Medicine..... | (1931), (1932, 4) | | 5 |
| University of Buffalo School of Medicine..... | (1932, 4) | | 4 |
| University of Rochester School of Medicine..... | (1932, 5) | | 5 |
| University of Oregon Medical School..... | (1931) | | 1 |
| Hahnemann Medical College and Hospital of Philadelphia..... | (1932, 5) | | 5 |
| Jefferson Medical College of Philadelphia..... | (1931, 2), (1932, 3) | | 5 |
| Female University School of Medicine..... | (1932) | | 1 |
| " " School of Med.... | (1931), (1932, 2) | | 3 |
| " " School of P..... | | | 1 |
| University of Vermont College..... | | | 1 |
| University of Virginia Depart..... | | | 1 |
| University of Wisconsin Medical School..... | (1931) | | 1 |
| Dalhousie University Facul..... | | | 1 |
| Queen's University Facult..... | | | 1 |
| University of Toronto Fac..... | | | 1 |
| University of Western Ont..... | | | 1 |
| McGill U. F. of M. (1926), | | | 7 |
| Karl-Franzens-Universität..... | | | 1 |
| Charing..... | | | 1 |
| London..... | | | 1 |
| Univers..... | | | 1 |
| macie..... | | | 1 |
| Université..... | | | 1 |
| Medizinis..... | | | 1 |
| sität, Berlin..... | (1929) | | 1 |

| | | |
|---|--|---|
| Regia Università di Bologna degli studi Facoltà di Medicina e Chirurgia..... | (1932)* | 1 |
| Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia..... | (1930) | 1 |
| Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia..... | (1928), (1932) | 2 |
| Universidad Nacional Facultad de Medicina, Mexico..... | (1905)* | 1 |
| Licentiate of the Royal College of Physicians, Royal College of Surgeons, Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow..... | (1931) | 1 |
| University of Edinburgh Faculty of Medicine..... | (1930), (1931, 2), (1931)*, (1932, 4)* | 9 |
| University of St. Andrews Conjoint Medical School, Scotland..... | (1932, 3)* | 3 |
| Universität Basel Medizinische Fakultät, Switzerland..... | (1927) | 1 |
| Osteopaths..... | | 2 |

| College | FAILED | Year Grad. | Number Failed |
|---|-----------------------------------|------------|---------------|
| University of Georgia Medical..... | (1931) | | 1 |
| University of Louisville School..... | | | 1 |
| Tulane University of Louisiana..... | | | 1 |
| Tufts College Medical School..... | (1931), (1932) | | 2 |
| Creighton University School of Medicine..... | (1930) | | 1 |
| Albany Medical College..... | (1932) | | 1 |
| Long Island..... | (1931) | | 1 |
| University of..... | (1932) | | 1 |
| University of Rochester School of Medicine..... | (1932) | | 1 |
| Hahnemann Medical College and Hospital of Philadelphia..... | (1932) | | 1 |
| Temple University School of Medicine..... | (1930), (1931) | | 2 |
| University of Pittsburgh School of Medicine..... | (1932) | | 1 |
| Woman's Medical College of Pennsylvania..... | (1924), (1927) | | 2 |
| Medical College of the State of South Carolina..... | (1931) | | 1 |
| University of Vermont College of Medicine..... | (1932) | | 1 |
| Medical College of Virginia..... | (1930) | | 1 |
| Laval University Faculty of Medicine..... | (1931) | | 1 |
| Karl-Franzens-Universität Medizinische Fakultät, Austria..... | (1927) | | 1 |
| Medizinische Fakultät der Universität Wien..... | (1925)*, (1926) | | 2 |
| Lékařské Fakulty Masarykovy University, Cze..... | (1928) | | 1 |
| Université de Paris Faculté de Médecine..... | (1930) | | 1 |
| Friedrich-Alexanders-Universität Medizinische Fakultät, Germany..... | (1931)* | | 1 |
| Albert-Ludwigs-Universität Medizinische Fakultät, Germany..... | (1926) | | 1 |
| Universität Heidelberg Medizinische Fakultät..... | (1933)* | | 1 |
| National University of Athens School of Medicine..... | (1922) | | 1 |
| Regia Università di Firenze degli studi Facoltà di Medicina e Chirurgia..... | (1928) | | 1 |
| Regia Università di Napoli, Facoltà di Medicina e Chirurgia..... | (1920)*, (1925), (1931)*, (1932)* | | 4 |
| Regia Università di Padova degli studi Facoltà di Medicina e Chirurgia..... | (1932)* | | 1 |
| Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia..... | (1920), (1928) | | 2 |
| Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia..... | (1931) | | 1 |
| Free Homeopathic College of Puebla, Mexico..... | (1920)* | | 1 |
| Licentiate of the Royal College of Physicians, Royal College of Surgeons, Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow..... | (1929) | | 1 |
| University of Edinburgh Faculty of Medicine..... | (1930) | | 1 |
| Osteopaths..... | | | 8 |

Ninety-two physicians were licensed by endorsement of credentials from Jan. 1 to May 12. The following colleges were represented:

| College | LICENSED BY ENDORSEMENT | Year Endorsement Grad. |
|---|--|------------------------|
| College of Medical Evangelists..... | (1929) | Maryland |
| Yale Univ. School of Medicine..... | (1921) Mass., (1931, 3) N. B. M. Ex. | N. B. M. Ex. |
| George Washington Univ. School of Medicine..... | (1928) | Maryland |
| Howard University College of Medicine..... | (1931, 2) | Maryland |
| Atlanta Medical College, Georgia..... | (1914), (1915), (1916) | Georgia |
| Emory University School of Medicine..... | (1927) | N. Carolina |
| Loyola University School of Medicine..... | (1932) | New Jersey |
| Northwestern University Medical School..... | (1923) | California |
| Rush Medical College..... | (1927) | Wisconsin |
| Indiana University School of Medicine..... | (1925) | Indiana |
| University of Kansas School of Medicine..... | (1926) | Kansas |
| University of Louisville School of Medicine..... | (1927) | Kentucky |
| (1930) N. B. M. Ex. | | |
| Johns Hopkins University School of Medicine..... | (1926), (1929), (1930) N. B. M. Ex., (1929, 2), (1931) | Maryland |
| University of Maryland School of Medicine and College of Physicians and Surgeons (1930, 2), (1931, 2) | | Maryland |
| (1931) N. B. M. Ex. | | |
| Boston University School of Medicine..... | (1923) | Mass., |
| (1931) N. B. M. Ex. | | |
| Harvard University Medical School..... | (1916) | Connecticut |
| (1926) Massachusetts, (1930) N. B. M. Ex. | | |
| Tufts College Medical School..... | (1931) N. B. M. Ex., New Jersey | |
| St. Louis University School of Medicine..... | (1931) N. B. M. Ex. | |
| Washington University School of Medicine..... | (1925) N. B. M. Ex. | |
| Columbia University College of Physicians and Surgeons..... | (1917) | Michigan |
| (1929), (1930, 3), (1931, 6) N. B. M. Ex., (1931) | | New Jersey |
| Cornell University Medical College..... | (1930), (1931) | N. B. M. Ex. |
| University of Buffalo School of..... | | B. M. Ex. |
| University of Rochester School of..... | | B. M. Ex. |
| Western Reserve University Sch..... | | Ohio |
| Jefferson Medical College of Philadelphia..... | (1931) N. B. M. Ex. | |
| University of Pennsylvania School of Medicine..... | (1922) | N. Carolina |
| University of Pittsburgh School of Medicine..... | (1924) | N. B. M. Ex. |
| Woman's Medical College of Pennsylvania..... | (1930) N. B. M. Ex. | |
| Meharry Medical College..... | (1923) | Georgia |
| Vanderbilt University School of Medicine..... | (1917), (1930) | Tennessee |

| | |
|---|------------------------------|
| Medical College of Virginia... (1930, 3), (1931, 2), (1932) | Virginia |
| University of Virginia Department of Medicine... (1905) | N.B.M.Ex., |
| (1927) Tennessee | |
| Queen's University Faculty of Medicine... (1916) | Ontario |
| University of Toronto Faculty of Medicine... (1925) | Ontario |
| University of Toronto Faculty of Medicine... (1916) | B. C., |
| (1931, 3) N. B. M. Ex. | |
| Leopold-Franzens-Universität-Medizinische Fakultät, Austria | |
| Medizinische Fakultät der Universität Wien... (1924) | New Jersey |
| University of London Faculty of Medicine... (1926)* | Diploma |
| Universität Heidelberg Medizinische Fakultät... (1925)* | N.B.M.Ex. |
| Magyar Királyi Erzsébet Tudományegyetem Orvostudo- mányi, Hungary | (1919)* Germany |
| Magyar Királyi Ferencz József Tudományegyetem Orvostudományi, Hungary | (1927) Diploma |
| Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultása, Budapest | (1929) Diploma |
| Regia Università di Napoli. Facoltà di Medicina e Chirurgia | (1912) Diploma |
| Re... (1921) | Kentucky, (1928)* New Jersey |
| Dr. | * Diploma |
| Ui. | * Missouri |
| Ui. | * Diploma |
| Ui. | * Diploma |
| Ar. | * Maryland |
| | Syria |

*Verification of graduation in process.

Book Notices

Manic-Depressive Psychosis: An Investigation of the Most Recent Advances. The Proceedings of the Association, New York, December 29th and 30th, 1930. Association for Research in Nervous and Mental Disease. Vol. XI of a Series of Research Publications. Cloth. Price, \$10. Pp. 851, with 59 illustrations. Baltimore: Williams & Wilkins Company, 1931.

This volume, the eleventh in a series of similar publications, contains thirty-six reports of research on the subject of manic-depressive psychosis. Each contribution appears as a chapter. Forty-six psychiatrists have been engaged in the researches reported and a board of three members has performed the editorial work. An interesting chapter by Dr. Jelliffe on the historical phases of the manic-depressive synthesis opens the book and the ethnological phase is touched on in the closing chapter on manic-depressive reactions in Negroes. Not only usual aspects of the subject, such as etiology, symptomatology, pathology and treatment, are considered in the intervening chapters but also, as might be expected in a research publication of this character, some of the less usual ones also. Among these are the affective psychoses of childhood, organic constitution of the cyclothymic, psychoneuroses allied to manic-depressive psychoses, psychoanalytic sidelights on manic-depressive psychosis, mechanisms of the manic-depressive-schizophrenic combinations, behavior charting in thymegasia, gastro-intestinal roentgenologic studies, and several physiochemical and metabolic studies. As the disease concept of manic-depressive psychosis is a symptomatic one, no surprise is occasioned by repeated statements, both by the contributors and by members of the commission who discussed the papers, as to the difficulty of finding "pure manic-depressive cases" for study. Patients with more or less typical attacks of manic-depressive psychosis showed "aloofness" of the schizoid type in the intervals even in some of the selected cases. As stated on its title page, the book is an investigation of the most recent advances in knowledge of manic-depressive psychosis. Its purpose is accomplished well. It is not to be expected that collected papers of this sort, no matter how well edited, will have the uniformity and coherence to be found in a well organized textbook. On the other hand, material that would have to be excluded from a textbook can be found here. Physicians especially interested in psychiatry will find the book of value.

History of Chinese Medicine: Being a Chronicle of Medical Happenings in China from Ancient Times to the Present Period. By K. Chinlin Wong, Licentiate of Medicine and Surgery, Hongkong, and Wu Lien-Teh, M.A., M.D., Dr.M.Sc., Director and Chief Medical Officer, Manchurian Plague Prevention Service. Cloth. Price, \$7.50; 30s. Pp. 706, with 104 illustrations. Tientsin: Tientsin Press, Ltd., [n. d.].

This history is published in commemoration of the twentieth anniversary of the Manchurian Plague Prevention Service, established in 1912 as a result of the devastating pneumonic plague epidemic of 1910-1911. It is really a union of two distinct works: book one, the history of the time-honored indigenous art, by Dr. K. C. Wong, lecturer on medical history of

the National University, Woosung, Shanghai, and book two, an account of the introduction and progress of Western medicine from the times of its introduction by the first foreign physicians who settled in China to the present day, by Dr. Wu Lien-teh, director of the Manchurian Plague Prevention Service.

Book one is divided into twenty-one chapters treating of three periods, the ancient Legendary Period (2697-1122 B. C.), the Historical or Golden Period (1121 B. C.-960 A. D.), and the Medieval or Controversial Period (961-1800 A. D.). Of these three periods the Golden one is of greatest scientific and medical interest. In it the great trio of famous ancient physicians achieved their fame, the "Nei Ching" or "Canon of Medicine" was written, the doctrine of the pulse was elaborated, and the philosophies of Taoism and Buddhism influenced the course of development of the underlying concepts of medicine and disease. Buddhism brought Indian influences into the indigenous art and practices of China.

Near the close of the Legendary Period (1140 B. C.) the Chou-Li directed that the duties of the sorcerer should be separated from those of the doctor, to whom were committed all matters related to medicine and the collection of drugs. The ancient Chinese ideograph for doctor contained the symbol for priest or sorcerer, but this was later changed to that for wine, thus indicating that the practice of medicine was no longer confined to the priests, who employed strong weapons to kill or drive away the demons of sickness, but was transferred to doctors, who administered strong elixirs to their patients. Medical practice of the Legendary Period was mainly made up of charms, plant lore, and psychotherapy.

The Golden Period was made famous by the philosophies of Lao Tzu, Confucius and Mencius. Their ideas changed medicine from a restricted practical art based on observation but shrouded in superstition, to pretentious systems of healing carried to absurd and extravagant extents. The study of medicine accordingly came to be dominated by the scholastic subtleties of visionary philosophies and by reverence for authorities. It crystallized into a rigid formalism and was elaborated into a fantastic excess of detail.

In this period the two controlling basic ideas of Chinese medicine were formulated. The first is the doctrine of the two principles Yin and Yang representing the male and female forces, the originators of all things. They are represented by Pa Kua or eight trigrams, and are the Chinese pattern of the doctrine of opposites. They pervade the whole of medicine. Thus, the skin is Yang and the interior is Yin. The heart and liver are Yang organs, and the spleen, lung and kidneys are Yin. Both diseases and their remedies fall into the Yang and Yin categories, and these relations determine treatment.

The second doctrine is that of the five elements, akin in its application to that of the four humors of the Greeks. These five, wood, fire, earth, metal and water, interact as generators and subjugators. They are related to five organs of the body, the spleen, liver, heart, lungs and kidneys, and to a complete system of thirteen factors, such as planet, color, climate, direction, number and sound.

The number lore of Pythagoras was surpassed in subtlety by that of the Chinese and flowered into complexity in medicine. There are three souls, four methods of diagnosis, five afflictions and sufferings, five kinds each of the various diseases and of injuries, six of weather, and seven of emotions. Multiples of seven regulate the life of woman and of eight that of man. The dual order of nature is reflected in the structure of man. He has four reservoirs for brain, air, blood and water to agree with the four seas, and 360 bones for the reason that there are that many degrees in the circle.

The Nei-Ching, or Canon of Medicine, was a summary of the experimental, anatomic and physiologic knowledge and the theoretical ideas of the centuries that had preceded it. It is characterized throughout by sophisticated subtleties, systematized by the two basic ideas noted. There was no concept of a nervous system; anatomic and physiologic ideas were formal and often false. Claims that Chinese physiologists anticipated Harvey's discovery of the circulation of the blood were not substantiated by experiment or confirmed by observation but were represented by general ideas, such as that "all blood is under the control of the heart" and "the blood current flows continuously in a circle and never stops."

Therapeutic measures were best represented practically by acupuncture, the technic, indications, prognosis and results of which were given in great detail. Venesection, cauterization, moxa, decoctions and massage were also described in general terms but without specific directions. The doctrine of the pulse was elaborated for the diagnosis and location of every kind of disease.

In the Chou dynasty medicine was highly organized, with superintendents of high grade doctors, dietitians and medical men of middle grade, and surgeons and veterinarians of lower grade. Classification was based on records of successes and failures.

That prevention was better than cure was clearly recognized by famous sayings, such as:

The sage does not treat those who are ill but those who are well. —*Su Wen*.

The good doctor pays constant attention to keeping people well so that there will be no sickness. —*Huai Nan-tzu*.

The skilful doctor treats those who are well but the inferior doctor treats those who are ill. —*Difficult Classics*.

The good physician first cures the disease of the nation, then human ailments. —*Ancient History*.

Personal hygiene and public health were recognized in directions for avoidance of spoiled foods and meats. Contamination of foods was recognized, exposure of foods on street stands was advised against, moderation and regularity in eating and drinking and temperance in all things were commended, brewing and distilling were forbidden, and avoidance of worry and venery was advised. Deep breathing and fresh air, physical culture, and the artistic avocations were commended. Prostitutes were segregated and hospitals of a low order provided for defectives.

It was in this period that Ts'ang (180 B. C.) wrote his analytic case histories, that Chang wrote his famous "Treatise on Typhoid" (168 A. D.), and that Hua T'o used narcotics and practiced abdominal surgery. Confucian dogma, which held that the body must not be mutilated, checked the progress of Chinese surgery and obliterated its early accomplishments.

Women were admitted to the medical profession in the Han dynasty (B. C. 206-320 A. D.), and the cultivation of drugs was established in the sixth century.

The Medieval Period (961-1800 A. D.) was one of intense specialism and the organization of medical schools, state examinations, and the growth of formalism. Teachers were held responsible for the attendance and progress of their pupils and were fined for their pupils' failures. The president was fined for the professors' lapses. Graduates were distributed in fixed ratios to the major specialties and appointed to prefectures and districts. The Ming dynasty was famous not only for its achievements in the arts but also for the Great Herbal (1578 A. D.), the classic of Chinese pharmacology, consisting of fifty-two volumes and comprehending a range of natural history comparable to that of the thirty-seven books of Pliny's *Historia Naturalis*. It is the best work on Chinese materia medica. It included not only such absurd and unsavory things as tiger bones and bat's dung but also valuable products recognized in modern medicine, such as kaolin, calomel, eumenol, chaulmoogra oil, and the recently rediscovered ephedrine.

Chinese medicine is responsible for the use of boiled water, well cooked meats, and the sewers of Peiping. It had a respectable body of sound information on midwifery, prenatal care, and women's diseases, and on the diseases of the eye. The major helminths of man were known. Tapeworm infestation was attributed to the use of raw meat. Leprosy, cholera, beriberi and syphilis were recognized. Castration was successfully performed, and a form of vaccination as a preventive of the dire effects of smallpox was introduced about 49 A. D. Powdered smallpox scabs were introduced in cotton plugs in the nose, and two kinds of cow fleas were known, but only the white ones were ground into powder and mixed with rice flour into pills.

Syphilis is reported to have been introduced in the Ming dynasty (1505 A. D.), and mercury was used in its treatment. It is evident from the earlier literature that the relations of chancre and syphilis were unknown and that constitutional syphilis was in earlier periods confused with leprosy.

Book two is contained in pages 125-706. It is an elaborate and detailed account of the extensive developments of Western

medicine and medical institutions, the rise of hospitals and medical schools, the growth of public health, and the operation of preventive medical measures. The large share in the organization of medical service and its social acceptance by the Chinese people as the result of medical missionaries is clearly brought out.

One feature of especial interest in the history of medicine in China is the work of Sir Patrick Manson, who served from 1871 to 1882 at Amoy as customs medical officer and in the Missionary Hospital. It was here that he came in contact with microfilaria in the blood and sought to establish its relationship to elephantiasis. These discoveries, added to those of Lewis in India, laid the foundations for the later scientific developments in the detection of other Haematozoa, notably of the malarial parasites, the trypanosomes and the spirochetes.

This book fills a unique place not only in the history of the art of medicine but also in the relation of that art to one of the oldest and most cultured civilizations of mankind. It is a contribution to the anthropology, folklore, philosophy and cultural history of a great people. It reveals an art founded in empiricism, encrusted with the increments of superstition, and maintained for milleniums by the aid of ancestor worship and a dominating respect for the past and for the classic writings of the fathers of the art. This art was not lacking in some features of great practical utility which modern scientific medicine is rediscovering and disentangling from their unessential increments.

The invasion of this entrenched body of ideas and practices by the sometimes none too certain and often not wholly coherent concepts of Western medicine is one of the most interesting phases of the history of civilizations. On a grand scale it is the conflict of the scientific method and modes of thinking of the modern age with a shrewd empiricism founded on practice with enough of the confirmation of results to carry the load of the unessential increments of superstition and profiteering with which custom had overlaid this ancient art in China. In this respect the book is one inciting much rereading and is provocative of meditation, both on account of the underlying philosophies and because of the revelations of the behavior of the human animal in face of the mysteries of disease and death. It is a book for the thoughtful practitioner, for the library of every medical school, university, learned society and medical missionary, and for the student of human culture, and is a prize for the book lover.

A Text-Book of Surgical Nursing. By Frederick E. Neef, B.Sc., M.L., M.D., Consulting Gynecologist, Lenox Hill Hospital, O. P. D., and Rockaway Beach Hospital, New York. Cloth. Price, \$2.25. Pp. 173, with 41 illustrations. Philadelphia: Lea & Febiger, 1933.

In sixteen short, well written chapters, the author covers the principles of surgery and the essentials a nurse needs for the foundation of her practical work in surgical nursing. After a short history of surgery and surgical nursing, only the subjects of importance are considered briefly and directly. Extensive descriptions of surgical disorders and details of nursing procedure are eliminated. Of particular value are the chapters dealing with the relation of the nurse to the patient before and after operation. These include the care of emergency cases, the nurse's duties in the operating room, special nursing measures after operation, and the recognition, prevention and treatment of complications. An unusual chapter in a nurse's textbook is one on radium in surgery, in which the principles and methods of its use are discussed. The book is well outlined, clearly and concisely written, and accurate to the point of being dogmatic at times. At the end of each chapter are good suggestions for classroom demonstration and suitable questions for review.

La tubercolosi del polmoni e delle pleure. Del Prof. Dott. Stefano Mancini, medico primario dell'Ospedale Civile di Livorno. Paper. Price, 50 marks. Pp. 1135, with 90 illustrations. Leipzig: Georg Thieme, 1933.

Here is truly an encyclopedic treatise on pulmonary and pleural tuberculosis. It has the rare merit of presenting an objective critical review of all the theories and hypotheses on the subject, unbiased by personal views. The subject is skillfully treated and the controversial theories are discussed. The author does not seem to be conversant with some of the work on the chemistry of tuberculosis and on the tuberculo-proteins that is being developed in America through cooperative research.

Ranke's doctrine on the clinical development of the disease and its division in the three stages is well presented with detailed discussion of the numerous objections that have been advanced against it. In chapter VIII the rôle of infections in the course of disease are carefully presented with the evidence tending to show that quite often the hypersensitive state prevails which renders the body hypersusceptible to the infection. The chapters on x-ray studies of the disease in all its stages and the clinical diagnosis of the disease in all its manifestations can be read with profit.

The surgical treatment of pulmonary tuberculosis is described in full detail. Pneumothorax and exeresis of the phrenic nerve are discussed, but there is a regrettable lack of statistical data. The medical, chemotherapeutic, and biologic treatment of tuberculosis is described profusely in several chapters.

The absence of statistical data and evaluation of the therapeutic agents mentioned is a disappointment. A large number of preparations of unknown composition are mentioned without any information on pharmacologic action, toxicity and therapeutic results in animals and man.

Morris' Human Anatomy: A Complete Systematic Treatise. Edited by C. M. Jackson, M.S., M.D., LL.D., Professor and Director of the Department of Anatomy, University of Minnesota. Ninth edition. Fabrikold. Price, \$10. Pp. 1481, with 1166 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1933.

This edition has been carefully and thoroughly revised, and some of the sections have been entirely rewritten because of the development of new material. There are 253 new plates, of which 92 are printed in color. Obsolete illustrations have been omitted. The preface points out that the nomenclature includes the latest contribution of the Nomenklatur-Kommission (NK) immediately after the BNA terms. There is a list of associate contributors who have been responsible for special sections of this work. Important facts are given in large type, followed by fine details in small type, with the use of boldface for names wherever they appear. The long record of usefulness of this book constitutes sufficient recommendation.

La gymnastique des tout petits. Par Doris Reichmann. Traduit de l'allemand par le Dr. P. Gauthier-Villars. Paper. Price, 20 francs. Pp. 57, with 71 illustrations. Paris: Librairie-Imprimerie Gauthier-Villars, 1933.

This little book is a French translation of the German work of Doris Reichmann. The book contains the outline of general observations and specific gymnastic movements for young normal children. It contains directions for twenty sessions of gentle passive movements in training an infant 4 months of age. The sessions vary from five to fifteen minutes in duration. The movements of the upper and lower extremity and trunk are illustrated by excellent photographic reproductions and line drawings. One is struck by the illustrations of remarkable child models. Not one of the children was able to walk.

A Companion to Manuals of Practical Anatomy. By E. B. Jamieson, M.D., Senior Demonstrator and Lecturer on Anatomy, University of Edinburgh. Third edition. Cloth. Price, \$5. Pp. 654. New York & London: Oxford University Press, 1932.

The first edition of this book, which appeared about twenty years ago, passed through six printings; the second, through three printings. The present edition is a hundred pages longer, because of advances in the knowledge of anatomy and to make the descriptions more readable. The book follows strictly the Basle anatomic nomenclature but inclines somewhat toward the use of English terms for certain words. It is an exceedingly practical, succinct outline of the manuals of practical anatomy used by most medical students in their dissections. The book is printed on good stock and fits easily into the coat pocket, despite the number of pages.

Ergebnisse der Enzymforschung. Herausgegeben von F. F. Nord und R. Weldenhausen. Bearbeitet von R. Ammon, A. Bertho, usw. Band II. Cloth. Price, 30 marks. Pp. 358, with 58 illustrations. Leipzig: Akademische Verlagsgesellschaft m. b. H., 1933.

The favorable reception accorded the first volume of the *Ergebnisse der Enzymforschung* has stimulated the preparation of a second volume bearing the same title. A similar plan of publication has been followed; namely, the collection of summarizing reports on various topics of enzyme research. The subjects discussed make this volume a valuable addition to

the one that appeared last year. The new subjects include the kinetics of enzyme reactions, cryolysis and its relation to the mechanism of enzyme action, the stereochemical specificity of esterases and the synthetic action of the ester splitting enzymes, the specificity of emulsin, the experimental basis of the enzymatic splitting of sugars, isolation and properties of crystalline trypsin, chemical reactions and energy relationships in the degradation and synthesis of carbohydrates and their split products, cozymase, the energy metabolism of the yeast cell, glycolysis, the mechanism of dehydrogenation, cytochrome and intracellular respiratory enzymes, peroxidase, blood coagulation, experimental enzyme systems, and the enzymatic function of mitochondria. An extensive author index is again included.

Syllabus of Medical History. By Victor Robinson, M.D., Professor of History of Medicine, Temple University School of Medicine, Philadelphia. Cloth. Price, \$1. Pp. 110, with illustrations. New York: Froben Press, 1933.

This is merely a compilation of a few questions and answers in the medical historical field. Its usefulness is obviously limited. It is intended, apparently, as a guide to teachers of medical history in developing their courses on the subject. However, the subject is in itself so individual that most teachers of medical history prefer to develop their own outlines and to teach according to their personal interests and the interests of their students.

Les maladies de l'énergie: Les asthénies et la neurasthénie. Par Albert Deschamps et Jean Vinchon. Fourth edition. Paper. Price, 40 francs. Pp. 423. Paris: Librairie Félix Alcan, 1932.

Written with the keen, logical analysis characteristic of the French clinician, this book offers a real contribution to an understanding of the mass of disorders that have been grouped under the general title of neurasthenia. The material is based on an intimate detailed observation of patients, coupled with a remarkably clear insight into the significance of the dynamic aspects of the organism; the presentation is strictly clinical. The view adopted in analysis is chemico-physical rather than psychoanalytic in a technical sense. From his observations, Deschamps was able to sort out at least some varieties and to lay down some rational indications for therapy. The book was awarded the Herpin prize of the French Academy of Medicine; the present edition has been prepared by Vinchon, who has retained most of the material originally included and has made some additions. The topic of energy of the body, with disorders in its production and distribution, is of universal medical interest; this book will well repay those who read it and can be recommended to physicians in general.

Observations of a General Practitioner. By William N. Macartney, M.D. Cloth. Price, \$3. Pp. 478. Boston: Richard G. Badger, 1932.

This is an autobiographical book of medical practice written by a practitioner of Fort Covington, New York. It is written in a rough and ready manner with numerous anecdotes. It discusses everything from domestic nursing, diet, pills and prescriptions to all sorts of diseases. There is a clinical index. One is inclined to doubt therapeutic knowledge which says that lobelia, grindelia, euphorbia pulifera and various herbal preparations are of service in treating asthma. Altogether the book offers a record of practical experience, but it is dispensed with a mass of verbiage.

Intracranial Tumors Roentgenologically Considered. By Loyal Davis, M.D., Ph.D., F.A.C.S., Professor of Surgery, Northwestern University Medical School. Volume XIV, Annals of Roentgenology: A Series of Monographic Atlases. Edited by James T. Case, M.D., Professor of Roentgenology, Northwestern University Medical School, Chicago. Cloth. Price, \$10. Pp. 277, with 135 illustrations. New York: Paul B. Hoeber, Inc., 1933.

The purpose of this volume is stated to be to emphasize the diagnostic and surgical importance of roentgenology in the treatment of intracranial tumors. This it proceeds to do as adequately as technical limitations will permit. In many of the plates, however, one sees the arrows but not what the arrows would indicate. Roentgenograms of the skull should always be stereoscopic, the anteroposterior as well as the lateral films. One should always be suspicious of convolutional digitations as an indication of intracranial tension when the sutures are not separated. The pituitary fossa is not always flat and saucer-like in secondary hydrocephalus, and a ballooned sella is not always pathognomonic of a pituitary adenoma.

In ventriculograms, the lighter air-shadow which lies lateral to the typical butterfly-wing is not the body of the ventricle but the flange of the anterior horn, which curves laterally over the head of the caudate nucleus. Many of the illustrations are superfluous and many of the clinical histories also, except in the chapters on encephalography and ventriculography, and do not aid in the comprehension of the text. The pathologic and clinical introduction to each chapter should prove useful to the roentgenologist and the book as a whole should be helpful to those who do not have direct access to such actual roentgenologic material.

Medicolegal

Abortion Due to Trauma.—The appellees, Bessie Hall and her husband, boarded the appellant's train at 11 a. m. About the time Mrs. Hall reached a seat and before she had time to sit down, the train started with a jerk. This caused Mrs. Hall to fall and strike her side against the arm of the seat. She was then about three months pregnant. The blow produced great abdominal pain and a hemorrhage from the genital organs, which continued until about 5 o'clock the following morning, when an abortion occurred. Mrs. Hall and her husband brought suit. On behalf of the defendant, a physician testified that in his opinion the abortion did not result from the injury, because the injury was not inflicted on the uterus and because sufficient time did not elapse between the time of the injury and the delivery of the fetus for the injury to have been the proximate cause of the abortion. A physician testifying for the plaintiffs said that in his opinion the injury might have caused the abortion. Judgment was given in favor of the plaintiffs, and the defendant railroad company appealed. Courts, said the Supreme Court of Arkansas, are not required to accept the opinions of expert witnesses as absolutely true and, regardless of all facts and circumstances in conflict with such opinions, to instruct verdicts based on the opinions of such witnesses. Expert witnesses themselves frequently differ in their conclusions and opinions in response to identical hypothetical questions, and hence their opinions do not rise to the level of physical facts. In this case, lay testimony tended to show that the injury was the direct cause of the abortion, and this was supported to a certain extent by the evidence of the physician who attended the injured woman at the time of the accident. There was, therefore, a conflict in the testimony, for determination by the jury and not by the court. And a directed verdict, which the defendant seems to have sought, was properly refused. The judgment of the trial court was affirmed.—*Missouri Pac. R. Co. v. Hall (Ark.)*, 53 S. W. (2d) 432.

Insurance: Misstatement by Insured in Application; Privileged Communications.—In executing an application for insurance, the applicant was asked, "Have you consulted a physician during the last five years?" To this he answered, "No." As a matter of fact he had been under treatment by a physician for two days for "a bilious attack and a bad cold" and had gone for treatment to a hospital maintained by his employer. It must be admitted, said the Supreme Court of Arkansas, that the representation made by the insured was a warranty, but even though the application contains a warranty, the power of the insurer's agent remains the same. When the agent is authorized to ask the question and to write the answer, and when he puts his own construction on facts of which he has knowledge and deduces from them an erroneous answer, which he writes down, his principal may be estopped from denying the correctness of the answer. When the applicant is acting in good faith and does not knowingly make a false answer as to facts on which the medical examiner may base his conclusion, he has a right to rely on the superior knowledge of the medical examiner. It would be a grave mistake to suppose that the rule which would avoid a contract for a false warranty could be extended so as to hold the applicant responsible for the truth of an answer which was the result of a mistake in judgment, or an error or a blunder, of the insurer's agent especially charged by the insurer with the preparation of the application.

The contract of insurance in this case stipulated that the insurance certificate should be held to be a contract made in the state of Ohio and subject to its laws. The insurer insisted that, under the decisions of the Ohio courts construing clauses in insurance policies similar to the policy before the court, the insured had waived his right to insist on secrecy under a statute providing for privileged communications between physician and patient. The insurer proffered, therefore, the evidence of physicians in attendance at the hospital where the insured had been under treatment before taking out his policy, to show his then physical condition and the diseases with which he was then afflicted. But, said the court, while the contract is by agreement of the parties to be construed as an Ohio contract, the laws of that state have no application except as to the determination of its meaning. The competency and admissibility of evidence are to be determined by the laws of the jurisdiction in which the case is tried—in the present instance, Arkansas. The Arkansas statute makes privileged the information which a physician or a trained nurse obtain while acting in a professional capacity, which is necessary to enable him or her to prescribe as a physician or to act as a trained nurse. A patient may waive the privilege by calling the physician as a witness or by a clause in the contract on which the suit is based. In the present instance, however, the contract contained no such clause, and the trial court properly refused to admit the proffered testimony of the physicians who treated the insured prior to the time when he made his application for insurance.—*Brotherhood of Railroad Trainmen v. Long (Ark.)*, 53 S. W. (2d) 433.

Workmen's Compensation Acts: Death Caused by Perforating Duodenal Ulcer.—A workman, in the course of his employment, stooped to pick up a toy trunk. While he was in the act of reaching down, and before he had picked up the trunk, he was attacked by a violent abdominal pain, which caused him to desist. He was immediately disabled and was taken home and later to a hospital. On the following day an operation showed a perforation of the duodenum, due to duodenal ulcers. The patient died of septic peritonitis caused by the perforation. His widow claimed compensation under the workmen's compensation act of Illinois. The circuit court set aside the order of the industrial commission, confirming an arbitrator's decision that the claimant was not entitled to compensation, and made an award in favor of the claimant. The employer appealed to the Supreme Court of Illinois. A claimant seeking compensation because of an employee's death, under the workmen's compensation act of Illinois, said the Supreme Court, must prove by direct and positive evidence, or by evidence from which the inference can fairly and reasonably be drawn, that death was caused by an accidental injury which not only occurred in the course of the deceased's employment but also arose out of his employment. Compensation may be awarded even though the deceased was suffering from a preexisting disease, if that disease is aggravated or its course accelerated by accidental injury, but the accidental injury must be the immediate or proximate cause of death. The finding of the industrial commission and of the arbitrator, said the Supreme Court, that in the present case the workman's employment was not the primary cause of his death and that his death did not arise out of such employment, was not contrary to the manifest weight of evidence. The judgment of the circuit court was therefore reversed and the decision of the industrial commission confirmed.—*Cruzan v. Industrial Commission (Ill.)*, 183 N. E. 334.

Malpractice: Nonunion of Fractured Femur Following Premature Departure from Hospital.—McHenry fractured his thigh bone near the hip and was removed to a hospital for treatment. A roentgenogram disclosed that the bone was shattered and that pieces of it extended into the flesh. After an unsuccessful attempt to get the fragments into place, an operation was performed, fragments of bone were removed, the fracture was set, and the limb was placed in a brace. When McHenry had been in the hospital about fourteen days, he decided to go home. His physician, one of the appellants, remonstrated and warned him of the danger of leaving so soon. The warning was of no effect. McHenry signed a statement by which he assumed all responsibility for the results and released all attendants from liability. The Thomas brace

in which the limb was being treated was removed, splints were put on, and relatives took McHenry home in a truck. When he arrived home, he removed the splints and placed his leg in a trough that he had constructed. A bad union resulted, and McHenry sued the physicians who had treated him. He contended that they erred in removing pieces of the fractured bone and predicated his case on the proposition that their removal was the absolute cause of the imperfect union. Judgment was given in his favor, and the physician-defendants appealed to the Supreme Court of Oklahoma.

In this case, said the Supreme Court, there was no special warranty of cure or special contract. There was only the implied contract that the defendants possessed that reasonable degree of learning, skill and experience which is ordinarily possessed by other members of the medical profession, that they would use reasonable care and diligence in the treatment of the case, and that they would use their best judgment in all cases of doubt as to the proper course of treatment. The evidence does not show that the physicians were lacking in qualification or experience. It does show that they used their best judgment in operating. If the patient had remained quiet, with proper splints on his leg, the chances of a good union would have been greatly increased. There was therefore, said the court, a failure of proof on the part of the patient to prove the necessary elements to support his complaint. The judgment of the court below was reversed and the case remanded with instruction to dismiss it.—*Muckleroy v. McHenry (Okla.)*, 16 P. (2d) 123.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
 Idaho State Medical Association, Yellowstone National Park, August 6-8. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
 Montana Medical Association of Anaconda, July 12-13. Dr. E. G. Balsam, Box 88, Billings, Secretary.
 Pacific Northwest Medical Association, Vancouver, B. C., July 4-7. Dr. C. W. Countryman, Paulson Medical Dental Building, Spokane, Wash., Executive Secretary.
 Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

MISSOURI STATE MEDICAL ASSOCIATION

Seventy-Sixth Annual Meeting, held in Kansas City,
 May 1, 2, 3 and 4, 1933

DR. JOSEPH W. LOVE, Springfield, in the Chair

The Role of Hepatic Function in Surgical Problems

DR. WARREN H. COLE, St. Louis: Adequate methods for determining impairment of hepatic function are still lacking. The multiplicity of functions of the liver is perhaps the greatest factor in the difficulty associated with the application of the various tests. After several years' experience with the dye test, utilizing the rate of excretion of phentetiothalein sodium following intravenous injection of 40 mg. per kilogram of body weight, I have been able to predict to a very helpful extent the relative operability of patients. I make no claims of superiority of phentetiothalein sodium over other dyes in estimating retention, if these dyes are given in doses much larger than the dose of from 3 to 5 mg. per kilogram of body weight, as is usually advocated.

The types of disease yielding most consistently high figures of retention of dye are confined largely to infections of the liver, associated frequently with gallbladder disease, and to diseases showing destruction of hepatic cells by toxic factors. During the early years of application of the test it was discovered that practically all the fatalities following cholecystectomy occurred in patients who showed a retention of dye above 50 per cent half an hour after injection (a retention of 10 per cent in half an hour is considered normal). I do not operate on patients with retention above 40 per cent (except emergencies) but postpone operation until bed rest, intravenous dextrose and transfusions have brought the retention down below this figure.

It was surprising to discover that the figures of retention might be only slightly elevated in patients with large livers such as produced by cirrhosis or even carcinoma (late stages excepted). Hepatic cells have an ability to regenerate very

rapidly. Since the injury to hepatic cells and displacement of these cells take place so slowly in diseases such as cirrhosis and carcinoma, it is logical to assume that regeneration is rapid enough to maintain the number of functioning cells near normal, except in the late stages of disease. There is perhaps no proof that the hepatic cells in cirrhosis or carcinoma (excepting the carcinoma cell itself) are injured until the disease becomes far advanced. This finding of retention only slightly above normal may indicate that the hepatic cells in the early stages of cirrhosis and carcinoma are not damaged but are merely displaced by the fibrous tissue or tumor growth, respectively.

Varicosities of the Broad Ligament

DR. ELLERY M. HETHERINGTON, Kansas City: Varicosities of the broad ligament produce marked symptoms. The arterial and venous anatomy of the pelvis explains why varicosities are so prone to form. The pathologic condition is due to passive congestion and includes cystic and fibrous changes in the ovaries, hyperplasia of the endometrium, cervical hypertrophy and fibrosis uteri. The etiologic factors are the anatomic peculiarity of the pelvic veins, general individual build, poor general health with low muscular tone, pregnancy, subinvolution, retroversion, prolapsus or descensus, pelvic tumors, obstipation, sexual overindulgence and increased intra-abdominal pressure. The chief symptoms are pelvic pain, which is dull and burning, most often left sided, worse on standing, partially or completely relieved by reclining, and increased on menstruation; sacral backache; changes in menstruation; bladder irritability, and reference of the pelvic pain down the inner thigh when standing. A corrective operation is offered whereby the uterus is suspended by plication of the round and broad ligaments. These ligaments are shortened, part of the veins ligated and the rest straightened by pulling them through or under a flap made in the anterior surface of the uterus. Anchoring is accomplished by four interrupted sutures on each side.

Narcolepsy

DR. E. T. GIBSON, Kansas City: The narcolepsy of Gelineau is characterized by two symptoms: (1) sudden imperative periods of sleep of short duration and (2) sudden transitory loss of power in part of or all the body with preservation of consciousness, preceded usually by a sharp emotional reaction, usually laughter or surprise. Recently reports from clinics in all parts of the world have shown that cases are becoming more frequent. I have studied six cases in the past year. Two pathologic conditions which bear some resemblance to narcolepsy are (1) cataplectic attacks, observed in a race of domestic goats from the Tennessee mountains, and (2) family periodic paralysis. Cases are reported which present unusual features of theoretical interest: (1) narcolepsy in two sisters, (2) a case in which the attacks were associated with myoclonic jerks, and (3) a case of cataplexy of several hours' duration. It is impossible to erect a consistent theory of narcolepsy at present. The only successful treatment for narcolepsy is ephedrine.

The Mechanism of Heart Block

DR. L. B. HARRISON, St. Louis: Heart block was defined by Mackenzie in 1906 as that condition in which the stimulus for contraction passing from auricle to ventricle by the muscular fibrils joining the auricle and ventricle is stopped or blocked on account of some deficit to those muscle fibers. The first to prove that the auricular impulse spread to the ventricle by passing over the muscular connection was Gaskell in 1883. It was demonstrated years ago that a delay may occur in the conduction of the cardiac impulse from the sinus node to the auricle in the human heart, so-called sinu-auricular block. If this block is not severe enough to produce dropped beats, it cannot be recognized either by clinical or by graphic means. As the block increases dropped beats appear, the beats following appearing in slightly less than multiplications of the normal beat intervals. Partial heart block includes all grades of block up to that condition in which no auricular impulses are transmitted to the ventricle. Mild cases of partial block or simple auriculoventricular delay are unrecognized except by graphic records. Occasional dropped beats and higher degrees of block are recognized clinically and sometimes accurately determined by observation of jugular pulsation and ventricular rate. Complete block gives the so-called idioventricular rhythm. The

mechanism may be explained by the failure of the auriculo-ventricular bundle to recover from previous activity, owing to faulty nutrition from disease, vagus nerve action, or fatigue, as in extreme tachycardia. The rate of the ventricles as a rule ranges between 28 and 40, while auricular rate may be normal or slightly increased. In bundle branch block the main or terminal branches of the bundle of His are blocked, giving all degrees of intraventricular block, the smaller branch blocks being unrecognizable, while blocking of either the right or the left bundle may be made out by means of electrocardiography.

Extrasystoles and Paroxysmal Tachycardia

DR. CARL R. FERRIS, Kansas City: Extrasystoles are the simplest and commonest abnormalities of cardiac rhythm. Paroxysmal tachycardia, related to extrasystoles in manner of production, is of more clinical significance. Premature beats (or extrasystoles) are of three types: auricular, ventricular and nodal, resulting from "ectopic" stimuli arising in the auricles, ventricles and auriculoventricular node, respectively. About one half of the persons in whom extrasystoles occur are unaware of their presence. Their chief clinical importance lies in the fact that resulting symptoms are frequently alarming and because they may be associated with otherwise unrecognized heart disease. The mechanism in the production of premature contractions is obscure. Their cause may be found either outside or inside the heart. Although relatively unimportant clinically, their presence justifies painstaking investigation into their etiology. The paroxysmal tachycardias are likewise auricular, ventricular and nodal in type. Paroxysmal auricular tachycardia is the most common and least important type. Conditions responsible for extrasystoles are responsible also for auricular paroxysmal tachycardia. Symptoms may be either mild or severe. The ventricular type is usually a serious disturbance of rhythm. It is found as a rule associated with serious heart disease. The prognostic significance of paroxysmal tachycardia of ventricular origin makes differential diagnosis important.

Treatment of the Cardiac Episodes of Middle Life

DR. O. P. J. FALK, St. Louis: In New York, where there was a continuous rise in cardiac deaths from 133 per hundred thousand in 1900 to 280 in 1928, 51 per cent of the cardiac deaths were between ages 40 and 70 and only 8 per cent under 40. The most frequent causes of heart disease after 40 are associated with vascular deterioration, such as coronary arteriosclerosis and the changes in the smaller arterioles so frequently associated with vascular hypertension. Aside from the fact that more people are being enabled to live to the age of cardiovascular degeneration, further contributing factors are the influence of heredity, the hypersthenic constitutional type and disorders of metabolism such as obesity and diabetes, together with the effect of the strain and speed of our highly competitive industrial civilization, in which the art of quiet relaxation seems to have been almost entirely overlooked. Two developments of outstanding importance in present-day cardiology are the importance of analyzing the early subjective expression of organic heart disease and the recognition of certain reliable objective criteria of organic heart disease.

Gastric and Duodenal Ulcer

DRS. J. W. THOMPSON and HORACE W. SOPER, St. Louis: Experimental surgery has not provided conclusive proof concerning the etiology of gastric and duodenal ulcer, and the practical points of the management have always been subject to wide variations. Recent years have led to some exact differentiation between cases requiring medical or combined surgical and medical attention. The roentgen ray is the chief reliance in diagnosing these conditions. Duodenal ulcers practically never undergo malignant degeneration. Medical treatment in the Soper-Mills Clinic is reserved for early uncomplicated duodenal ulcer. The benign gastric ulcers yield readily to dietetic and hygienic management, particularly with the employment of the Levin indwelling nasal catheter, which is permitted to advance into the duodenum or jejunum. This procedure amounts to practically the same as a surgical jejunosotomy and is as effective as healing even large benign gastric ulcers. The ulcers not responding to the so-called therapeutic test of healing should be subject to surgical treatment. Several

types of complicated duodenal ulcers are amenable only to surgical measures. Among these classifications may be mentioned the acute perforated, recurrent hemorrhagic, chronic recurrent, organic obstructive, multiple ulcerative and chronic perforating types. The type of operation to perform in the surgical treatment of duodenal ulcer varies with the anatomic and pathologic characteristics discovered in each individual instance. Gastro-enterostomy is by far the operation of choice in the majority of instances. Pyloroplasty and gastric resection or gastroduodenostomy are other types of procedure applicable to the treatment of duodenal ulcer in the chronic form. In the acute perforated ulcer, conservative closure of the perforation without gastro-enterostomy seems to be the procedure of choice. The postoperative management is important. The mechanical procedures of surgery cannot be expected to permit unphysiologic abuses of the patient's stomach by indiscretions in dietary and hygienic habits. The elimination of foci of infection is also considered important.

Renal Complications of Gallstone Disease

DR. WILLARD BARTLETT, JR., St. Louis: Eight cases of acute nephritis and a questionable ninth case of renal insufficiency and suppression of urine complicating gallstone disease are reported. I have renal function tests done as a routine procedure in all cases of biliary tract infection. Tests of function employed are phenolsulphonphthalein excretion, determination of blood nonprotein nitrogen, and urine concentration tests. I believe that the nephritis occurs primarily as a result of the action on the kidney parenchyma of toxins from the infecting organism. Jaundice may be a contributing factor but is not constant. Attempts to reproduce the clinical picture in animals have invariably failed. This series of cases formed an incidence of more than 10 per cent of all patients with gallstone disease over the period studied. The complication is very serious. The majority of patients in other series have died, the complication having occurred after radical operation. This is avoidable by routine preoperative estimation of renal function. When function is impaired, the operation should be divided into stages, preliminary cholecystostomy under local anesthesia only being done at the first hospitalization, with maintenance of biliary drainage by a Pezzer catheter for from three to six months. In this series, the complication occurred preoperatively in one patient before its significance was recognized and recurred after cholecostomy, with death. In the remaining eight cases it was present on admission or developed shortly after; three of these patients died without operation, three recovered after cholecystostomy and two died on the second and eleventh days, respectively, one of pulmonary embolus and the other of pneumonia. Urinary function was recovered in both.

Mycotic Infections of the Skin

DR. THOMAS B. HALL, Kansas City: Mycotic skin infections may be divided into three groups: The first group includes all superficial dermatoses due to fungi other than *Monilia*; these number fourteen. In the second group are eight superficial dermatoses due to *Monilia*. The third group includes six mycotic skin diseases which are characterized by deep invasion of the skin by fungi. The *Monilia* infections seem to require usually a pathologic terrain and are frequently found in diabetic patients, hyperbese persons with overlapping skin folds, and those who work in special industries and keep their hands immersed in water for prolonged periods. Fungous infections of the hands and feet are the most prevalent of all skin diseases and are grouped into the following types: macerative interdigital, vesiculobullous, exfoliative, hyperkeratotic, moniliasis and mixed (epidermophyton and *Monilia*). Combinations of these types are common. The complications of mycotic infections of the hands and feet are classified into two groups. There are those which develop from injury to the skin by the fungi, producing a condition favorable to the invasion of other organisms. In this manner pyoderma, lymphangitis, phlebitis, lymphadenitis, recurrent erysipeloid attacks and septicemia may occur. The second group includes the "id" eruptions, which are due to the fungi themselves provoking skin lesions remote from the primary focus. Vesicular, bullous, papular and urticarial lesions, as well as erythema multiforme, erythema nodosum and generalized exfoliative dermatitis have been described as occurring from fungous infections of the feet

and hands. Prolonged irritating topical treatment to acutely inflamed cases seems to favor the development of the "id" eruptions. Treatment should be individualized and based on clinical manifestations. All vesicular, secondarily infected and acutely inflamed cases should be brought well under control by soaks and lotions before ointments are applied. The generalized "id" eruptions require sedative treatment.

Anorectal Infection: Its Relation to General Medicine

DR. F. B. CAMPBELL, Kansas City: Anorectal diseases may be classified as those due to (1) structural weakness (hemorrhoids, prolapse, and so on), (2) infections and (3) injury. The majority of anorectal infections are secondary to infections of the respiratory tract or the mouth. A few are caused by acute or chronic infections of the intestinal tract and a few from a normal intestinal flora, from enema tips and from rough paper. The rectum is predisposed to trauma by its funnel-like shape, by a tendency to spasm of the sphincters, by encroachment on its lumen by varicosities, and by trauma from constipation. Functionally, it is predisposed to infection by an acute diarrhea and by liquid stools from laxative or soap suds enemas, which remove the normal protecting mucus, leaving the mucosa open to chemical irritation and infection. The crypts are the most vulnerable point and cryptitis the most common lesion, and it may become chronic. Hemorrhoids may result from or be a predisposing cause of infection. It should be remembered that there is a close relationship between anorectal disease and gastro-intestinal symptoms, nervousness, headache, backache or leg pains. Malfunction or disease of the colon may hinge on anorectal disease. Treating a spastic colon while ignoring anorectal disease is illogical. Best results require cooperation between the proctologist and the internist.

Transurethral Prostatectomy: Indications and Limitations

DR. J. HOY SANFORD, St. Louis: Some able men prefer transurethral surgery to prostatectomy for the reason that the end-results are as good, the procedure is much safer and is attended with reduced mortality, there is less systemic and local reaction, and much less hospitalization is required. Other equally able men recommend transurethral surgery in selected cases as a substitute for prostatectomy but deny its usefulness in the larger obstructions for the following principal reasons: Sufficient gland cannot be successfully removed in single or multiple resections to give the desired end-results. There is a possibility of recurrence. There is danger of sepsis and hemorrhage. Certain parts of the gland are obscure to this type of attack. There is danger of infection in a closed bladder without adequate drainage (this applies only to large obstructions necessitating extensive electrocoagulation. It is a major surgical procedure requiring unusual skill and yet without sufficient supportive evidence to be accepted by the majority. I am convinced that from 75 to 100 cases should be done before any one classifies himself as capable.

Avoiding Complications in Gynecologic Radium Therapy

DR. KIP ROBINSON, Kansas City: Radium is the treatment par excellence of various malignant and benign gynecologic conditions, particularly carcinoma of the cervix. Infection plays a prominent rôle in cervical carcinoma. Pyometra may result from damming back infected material during treatment, and it may be necessary to introduce a small drainage tube alongside the radium capsules. Healing stenosis of the cervical os may produce a late pyometra, and dilatation and drainage must be done. Growths along the vaginal wall are treated with surface applications to produce as much shrinkage as possible before interstitial implantation is used. Much antiseptic douching is employed because of danger of setting up a pelvic cellulitis by puncturing through potentially infected areas. Great caution is used when dilating a carcinomatous cervix to avoid spreading the growth or producing infection. Cauterization should not be too deep followed by intensive irradiation because of the danger of extensive slough formation. With proper shielding and filtering, growths along the vaginal walls are treated without danger of rectovaginal or vesicovaginal fistulas, and even in extremely advanced cases

good palliation is obtained. A latent pyosalpinx may be stirred up by irradiation and should be removed surgically before treatment. Fibroids that are too large, are too rapidly growing, are associated with pressure symptoms, are pedunculated, are degenerated, are associated with other intra-abdominal lesions requiring surgery or are present in very young or very anemic sick patients should not be treated with radium but by surgery. Menorrhagia and metrorrhagia in young girls are treated only by very small doses to preserve fertility. Radium therapy, wisely administered, carries a much lower mortality in treating certain malignant and benign gynecologic conditions than surgery and is more effective.

Tuberculosis in Childhood

DR. SAM H. SNIDER, Kansas City: Pulmonary tuberculosis is not common in children; the disease is a tuberculosis of the lymphatics following the primary inflammatory manifestation. Symptoms are inconspicuous, the only common ones being fever and malnutrition. There usually are no abnormal physical conditions in the chest of a tuberculous child. Diagnosis rests on a positive tuberculin test (Mantoux or Pirquet). The extent of the involvement is shown by the roentgen ray, which, if used very early, may show the primary (Ghon) tubercle or inflammatory involvement in the parenchyma. When the infection becomes manifest, however, this Ghon tubercle has usually calcified or resolved and only a shadow of a calcified tubercle (Ghon nodule) remains, or resolution may be complete, leaving no scar. The roentgen rays usually show only hilus thickening and calcification and increased peribronchial markings. Pneumonic changes are rare. The immediate prognosis is good; sometimes a progressive tuberculosis develops immediately. Usually there is a long interval between infection and the true pulmonary (adult type) tuberculosis. The campaign against tuberculosis is to prevent infection of children, and this involves education of the public to the danger of kissing and indiscriminate handling of young children by tuberculous adults. Children are seldom a source of infection because they seldom expectorate tubercle bacilli. The adult with the open cavity is the greatest menace.

Diagnosis and Prognosis of Adult Pulmonary Tuberculosis

DR. G. D. KETTELKAMP, Koch: The history as to exposure to tuberculosis is of extreme importance. Since all pulmonary tuberculosis has a stage at which the tubercle bacilli are not liberated into the sputum, failure to find tubercle bacilli is of little value; if the lesion is such that one should expect a positive sputum, a negative sputum should put one on guard for a nontuberculous infection. The differential blood count is a great aid in measuring activity in pulmonary tuberculosis. The Arneith and Schilling shift to the left of the neutrophils as well as the relative percentage of lymphocytes, neutrophils and monocytes must be considered in interpreting the differential blood count.

Nonsurgical Treatment of Pulmonary Tuberculosis

DR. J. B. STOKES, Mount Vernon: The general medical profession should be more interested in the nonsurgical treatment of pulmonary tuberculosis, particularly artificial pneumothorax. In each community there should be a physician adequately trained to continue pneumothorax treatments. The most common complication of artificial pneumothorax is pleural effusion. In significant amounts it was present in only 23 per cent of our series at the Missouri State Sanatorium. The most common causes of pleural effusions are irritation of the air and the tearing of adhesions. Uniform pressures tend to reduce the incidence of effusions. Less common complications of artificial pneumothorax are pleural shock, air embolism, spontaneous pneumothorax and subcutaneous emphysema. The greatest hindrances to a successful artificial pneumothorax are pleural adhesions. How much they interfere depends on their extent, type and location. Artificial pneumothorax should be continued, in general, two or three years, and reexpansion preceded by phrenic neurectomy. Supervision at that stage is very important. Ordinarily, artificial pneumothorax cannot be reestablished. This is particularly true after effusions. At the Missouri State Sanatorium, artificial pneumothorax was reestablished after two months and later followed by oleothorax.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk () are abstracted below.

American Journal of Medical Sciences, Philadelphia

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- Focal Infections Implicating the Nervous System. F. Kennedy, New York.—p. 305.
- Tumors of Gasserian Ganglion. M. J. Cooper, Philadelphia.—p. 315.
- *Pneumonia in Kerosene Poisoning. J. I. Waring, Charleston, S. C.—p. 325.
- Effect of Cement Dust on Workers. A. E. Russell, Washington, D. C.—p. 330.
- Effect of Irradiated Ergosterol on Calcification of Tubercles in Experimental Tuberculosis. M. Jampolis and D. B. Witt, Chicago.—p. 338.
- Evolution of Tuberculosis in Human Lung. C. A. Stewart, Minneapolis.—p. 346.
- Intestinal Obstruction Caused by Food: Case Report. F. B. Block, Philadelphia.—p. 356.
- *Differential Diagnosis of Jaundice: Study of Two Hundred and Thirty-Five Cases of Nonhemolytic Jaundice Due to Carcinoma, Calculus in Common Bile Duct and Liver Degeneration. C. A. Flood, D. Seegal, B. Spock and R. F. Loeb, New York.—p. 358.
- Interrelation of Pernicious Anemia and Idiopathic Hypochromic Anemia: Study of a Family in Which Both Conditions Occurred Singly and Combined. C. W. Heath, Boston.—p. 365.
- *Erythrocytes in Pellagra. R. H. Turner, New Orleans, with the technical assistance of E. Shelton, New Orleans.—p. 381.
- Nonfilament Polymorphonuclear Neutrophil Count in Typhoid and Undulant Fever. J. R. Gallagher, Philadelphia.—p. 391.
- Further Note on Case of Gonorrheal Endocarditis with Recovery. M. W. Perry, Washington, D. C.—p. 394.
- *Bundle-Branch Block: Analysis of Three Hundred and Ninety-Five Cases. A. Graybiel and H. B. Sprague, Boston.—p. 395.
- *Evaluation of Various Methods of Investigating Circulation in Lower Extremities. D. W. Kramer, Philadelphia.—p. 402.

Pneumonia in Kerosene Poisoning.—Waring reports nine cases of kerosene poisoning in children with pulmonary complications. Leukocytosis with an increased polymorphonuclear percentage has been characteristic. The blood cholesterol appeared to be reduced, but no other chemical change was noted. Animal experiments tended to confirm the clinical opinion that the serious cases of kerosene poisoning are due to the aspiration of kerosene into the lungs, with production of inflammation and edema, and a potentially fatal pneumonitis. Supportive measures, especially stimulation with caffeine, have been used. Colonic irrigations and gastric lavage have been given, but, if regurgitation is to be avoided, the use of lavage might be questioned. In two of the patients who recovered, postural drainage was instituted but no direct evidence of its efficacy was noted. The blood chemical studies have not indicated any line of treatment. Because some of the children showed acetone in the urine, dextrose has been given to the patients seen recently.

Diagnosis of Jaundice.—Flood and his associates reviewed the records of 235 cases of nonhemolytic jaundice in order to determine what clinical evidence may be of assistance in differential diagnosis. It is not practicable to differentiate clinically early in the disease between cases with catarrhal jaundice and cases which are to develop acute yellow atrophy, as the early clinical pictures in these conditions seem to be identical. The symptoms and signs in necrosis of the liver due to some drug, such as arsphenamine or cinchophen, are the same as those seen in catarrhal jaundice or acute yellow atrophy, with the exception that patients with the latter conditions may give a history of antecedent infection of the upper respiratory tract. When the history of the exhibition of such a drug can be obtained, the diagnosis of liver necrosis is facilitated. Of particular assistance in the diagnosis of catarrhal jaundice in the middle aged is the short duration of the jaundice at the time when the patient feels sick enough to present himself for examination, and the usual vagueness of the presenting symptoms: a moderate degree of dull epigastric pain, malaise, anorexia and nausea or vomiting. Tenderness over the liver is present in more than 50 per cent of the cases. Minor signs that may be

of assistance are the "amine breath" and an acneform eruption. A high serum bilirubin favors the diagnosis of catarrhal jaundice or acute yellow atrophy rather than carcinoma or calculus. Calculus in the common bile duct offers few difficulties in diagnosis when there is a history of one or more attacks of the characteristic pain with local tenderness and leukocytosis. In carcinoma of the pancreas with jaundice, pain is the common initial symptom and is present early in the disease in the majority of cases. This pain is usually dull, boring and epigastric in location. In carcinoma of the bile duct or gall-bladder the clinical picture is usually not different from that seen in carcinoma of the pancreas. It is dangerous to hazard an opinion as to the exact location of a neoplasm obstructing the biliary tract. Primary carcinoma of the liver should be suspected in a patient who shows evidence of cirrhosis of the liver, who gives a history suggestive of some type of neoplasm and who has fever, upper abdominal pain and jaundice of slight degree.

Erythrocytes in Pellagra.—Using the most accurate available methods, Turner made erythrocyte counts, determinations of hemoglobin and percentages of packed red cells for seventy samples of blood from fifty patients with typical pellagra. The results with the calculated mean corpuscular volume, mean corpuscular hemoglobin, corpuscular hemoglobin concentration, volume index, color index and saturation index along with certain clinical features are reported. Of the pellagral patients, 56 per cent showed no appreciable anemia, 16 per cent showed slight or questionable anemia, 12 per cent showed moderate anemia and 12 per cent a severe anemia, while 4 per cent showed an extremely severe anemia. Two thirds of the patients who died showed no anemia according to the methods and standards used. Among those with severe anemia, other diseases that might have caused anemia were common. Patients who suffered from diarrhea did not appear to be more anemic than those without diarrhea. The author discusses the influence of dehydration in observing anemia. Anemia, when present, was definitely of the chlorotic, normocytic or microcytic type and in no instance of the macrocytic type. Thirty-four per cent of the patients had erythrocytes with corpuscular hemoglobin concentration less than normal, while in 66 per cent the concentration was within the normal range. The average size of the red cells tended to diminish in proportion to the severity of the anemia, contrasting with the opposite rule for pernicious anemia. The blood picture in the differential diagnosis between pellagra and pernicious anemia or sprue is of importance.

Bundle-Branch Block.—Graybiel and Sprague present an analysis of 395 cases of bundle-branch block. The diagnosis of bundle-branch block can be made with certainty only by the use of the electrocardiograph. From the standpoint of diagnosis and prognosis it is important to determine its presence in cardiac patients. Bundle-branch block almost invariably indicates serious organic disease of the heart, usually coronary disease; the average duration of life in the 223 fatal cases in the authors' series after the discovery of the conduction fault was one year and two months, but eighty-five other patients are still alive after an average of two years and eleven months following the discovery of the bundle-branch block. Partial bundle-branch block must be regarded clinically as equally significant with complete bundle-branch block, the prognosis in the two being essentially the same.

Circulation in Lower Extremities.—Kramer studied the circulation in the lower extremities of 150 patients, most of whom presented a history of diabetes. The merits and failures of the various methods that he used for his study appear to be as follows: The oscillometer measures the degree of pulsation of the vessels in a particular area without personal equation as an arbitrary factor in determining results. It gives information about the deeper vessels which cannot be palpated. It may suggest the existence of collateral circulation when definite lesions of the vessels are apparent. The reaction of the capillaries to histamine indicates the condition of the superficial circulation and indirectly of the deeper vessels. It may be employed as a guide to the capillary circulation and nutrition of the tissues. Physical examination of the extremities may throw some light on the status of the circulation if one ascertains the dorsalis pedis pulse, palpates for sclerosis as well, notes the warmth or coldness of the feet, and searches for various types

of lesions and the condition of the veins. Roentgen studies in 111 patients of the 150 showed evidences of calcification in fifty-one out of the sixty-three patients who presented evidences of a deficient circulation (81 per cent), while in the remaining twelve (19 per cent) the observations were negative. Of forty-eight patients with presumably efficient circulation, thirty-nine were negative and nine showed calcific deposits in the vessels. The author concludes that information derived from the various tests may be helpful to the surgeon when the question arises as to the advisability of operation for the relief of arterial spasm; in differential diagnosis of vascular disease, and in early diagnosis of impaired circulation. When amputation has been decided on, in some selected cases, the site for operation may be determined by the results of the studies.

Archives of Otolaryngology, Chicago

17: 135-296 (Feb.) 1933

- Genetic Factor in Otosclerosis. C. B. Davenport, Bess Lloyd Milles and Lillian B. Frink, Cold Spring Harbor, N. Y.—p. 135.
Progressive Deafness Occurring in Identical Twins. G. E. Shambaugh, Jr., with a discussion of the factor of heredity in the etiology of deafness by G. E. Shambaugh, Chicago.—p. 171.
Identical Hearing Defect in Identical Twins. F. H. Rodin, San Francisco.—p. 179.
*Pyemia Following Acute Tonsillar Infections. H. Rubin, Brooklyn.—p. 183.
Changes in Nasal Accessory Sinuses After Birth. W. W. Wasson, Denver.—p. 197.
*Vidian Neuralgia, with Especial Reference to Eye and Orbital Pain in Suppuration of Petrous Apex. H. H. Vail, Cincinnati.—p. 212.
Endonasal Radical Operation on Antrum. A. Wachsberger, New York.—p. 222.
Acute Laryngotracheobronchitis in Infants: Report of Three Cases. M. C. Johnson, Fort Smith, Ark.—p. 230.
*Otitis Media in Scarlet Fever. H. J. Williams, Philadelphia.—p. 235.

Pyemia.—Rubin points out that pyemia following acute tonsillar infections occurs in from 1 to 2 per cent of such cases. Chills occurring from two to three days after the beginning of a sore throat, or one occurring a week or two after an angina that has subsided, with a swelling along the anterior part of the sternocleidomastoid muscle or over the parotid region, may be the beginning of pyemia. One must exclude pneumonia, pyelitis or one of the blood dyscrasias, such as agranulocytosis or leukemia. Once the diagnosis is established, immediate exploration of the neck is advisable. When the cavernous sinus is involved, the infection spreads by way of the pterygoid plexus or the petrosal sinuses. It has been demonstrated that thrombi are present in the tonsillar veins in nearly all cases of acute tonsillar or peritonsillar inflammation. It is possible that, in some cases, abscesses of the lungs occurring after tonsillectomy may be explained on the basis that a tonsillectomy is done before the inflammation of the tonsil has subsided. The trauma resulting from the operation causes the phlebotic process to spread. In many cases the inflammation in the tonsil may not be demonstrable. The anaerobic streptococcus is the organism most frequently found. Blood cultures are positive in about 50 per cent of the cases. The presence of anaerobic streptococci or bacilli in the blood stream should make one consider the possibility of a preexisting tonsillar infection as the cause. In two of the author's four cases, which he reports, the blood culture was positive. The prognosis appears to be more grave when such organisms are present. Claus suggests an exposure of the structures of the neck from the mastoid process down to the clavicle. The parapharyngeal space should be exposed, and any infection found should be dealt with. Ligation or resection of the jugular and facial veins is also carried out. If it is impossible to determine on which side the infection is taking place, he suggests exposing the neck on both sides, and if the jugular vein is involved on one side, he suggests ligating or resecting it and ligating and resecting the facial vein on the opposite side. Waldapfel opens the parapharyngeal space and evacuates the abscess, at the same time protecting the mediastinum. Kissling obtains good results by simply opening the parapharyngeal space and draining the abscess. He ligates the jugular vein above and below the facial vein and opens the latter. In some cases the thrombus may extend to the jugular bulb or even upward, so that it may become necessary to open the mastoid process to remove the sinus plate and expose the lateral sinus. Meningitis may be caused by involvement of the jugular bulb and the lateral sinus in this condition. In every case of sepsis

following angina, the parapharyngeal space should be explored. There is a difference of opinion as to whether the tonsils should be removed at the time of operation.

Vidian Neuralgia.—Vail states that anatomic studies show the close relation between the great superficial petrosal nerve and any pneumatic cells which may be present in the anterior portion of the petrous bone. It has also been shown that impulses coming over the great superficial petrosal nerve can reach the orbit and from there pass over the terminal branches of the ophthalmic division of the trigeminus by means of the anastomosis between these nerves and the orbital branches of the sphenopalatine ganglion. He reports three cases of vidian neuralgia to show that irritation of the vidian nerve in the floor of the sphenoid sinus causes ocular and orbital pain. The ocular and orbital pains described by patients with suppuration of the petrous bone show a great similarity to those found in cases of vidian neuralgia. The great superficial petrosal nerve is extradural throughout its course. The gasserian ganglion and its division are above the dura. Hence there must be a dural involvement before the gasserian ganglion and its branches are affected.

Otitis Media in Scarlet Fever.—Williams observed that the incidence of otitis media in a series of 14,733 patients with scarlet fever was 10.8 per cent. In about one third, the disease was bilateral. The incidence of mastoiditis requiring surgical treatment was 1.1 per cent. The mortality in a series of 1,335 patients suffering from scarlet fever with acute suppurative otitis media was 4 per cent. The mortality in a series of 167 patients with scarlet fever on whom mastoidectomy was performed was 10.8 per cent. Early incision of a bulging tympanic membrane and incision of a ruptured tympanic membrane when the rupture is inadequate for proper drainage tend to lower the incidence of acute mastoiditis requiring surgical intervention in scarlatinal otitis. Repeated incision of a tympanic membrane is seldom of value. Of the 1,335 patients with acute suppurative scarlatinal otitis media, ninety-one, or 0.5 per cent, were children under the age of 10. The peculiarity of the eustachian tube in the child and the concurrence of pharyngeal and faucial tonsils and paranasal sinusitis predispose to the development of acute and chronic aural complications. In scarlet fever, aural complications of any degree of severity may arise at any time, from the first day of the acute symptoms to the last day of convalescence. The incidence of tonsillectomy and adenoidectomy in the 14,733 patients with scarlet fever was 6.8 per cent. In otitis media of scarlet fever there is no great tendency for the disease to extend from the bone to the meninges, as shown by a total of seven patients with meningitis from the series of 14,733 patients. Not infrequently the infection passes through the middle ear and appears as a postauricular edema, redness or a subperiosteal abscess, leaving the tympanic membrane intact. The useful principles of treatment available today are essentially those that were available twenty years ago.

California and Western Medicine, San Francisco

38: 73-144 (Feb.) 1933

- Cardiovascular Disease in Diabetes Mellitus: Analysis of Four Hundred and Twenty-Five Cases. J. W. Sherrill, La Jolla.—p. 73.
*Bismuth in Neurosyphilis. H. G. Mehrtens and P. S. Pouppirt, San Francisco.—p. 78.
Relation of Psychiatry to General Practitioner. C. L. Allen, Los Angeles.—p. 80.
Some Medical Profession Statistics: Facts Revealed by the 1930 United States Census. E. Bates, San Francisco.—p. 84.
California Chiropractic as a Lawyer Sees It. W. C. Woodward, Chicago.—p. 88.
Acute Nicotine Poisoning Noted in Manufacture and Use of Nicotine Insecticides. H. M. Stevenson, Stockton.—p. 92.
Muscular Fatigue, Muscle Strain and Muscle Cramps. R. Marx, Los Angeles.—p. 96.
Ovary of Rat After Hypophysectomy. Olive Swezy and R. I. Pencharz, Berkeley.—p. 97.
*Coronary Disease: Its Pathogenesis. N. Evans, A. C. Ambler and W. Dodson, Los Angeles.—p. 98.

Bismuth in Neurosyphilis.—Mehrtens and Pouppirt believe that ultimately some form of bismuth therapy will become suitable for neurosyphilitic disease because of its effectiveness in general syphilis. They recognize that bismuth does not penetrate into the central nervous system, and, while they are unprepared to state that clinical improvement and ability to penetrate into the central nervous system run parallel courses, it seems

to them almost necessary that a drug penetrate the central nervous system in order to produce therapeutic results. In the treatment of neurosyphilis, each case, by the very nature of its pathology, necessitates long drawn out therapy. It is imperative that the drugs used be such that their prolonged use shall not damage the kidneys or other vital organs. In a carefully observed series of cases treated intensively with bismuth compounds over a period of many months and years, no evidence of nephritis was elicited. This, of course, is quite contrary to the usual experience with preparations of mercury and arsenic. Their clinical experience with iodobismuthol containing bismuth as an anion indicates that its therapeutic effectiveness parallels its ability to penetrate into the meninges. The possibility suggests itself that the clinical usefulness of any bismuth preparation in the treatment of neurosyphilis is dependent on its ability to assume an electronegative form.

Coronary Disease.—From a review of the etiologic factors presented in the records of coronary occlusion in 8,500 necropsies, Evans and his associates conclude that: 1. The majority are caused by coronary artery atherosclerosis and resultant thrombosis. 2. Much less frequently do embolism and syphilitic arteritis play a part. In about 10 per cent of cases of syphilitic aortitis, narrowing of one or both coronary orifices results; but rarely, if ever, does the lesion extend far beyond these orifices. 3. Rarely, as in some instances in childhood, do inflammatory changes without arteriosclerosis serve as a focus for thrombosis. 4. Arterial hypertension with resultant cardiac hypertrophy characterizes a large proportion of these cases. 5. The average age at death is 62 or 63 years. 6. There is a remarkable preponderance of men over women who succumb to this disease; in this series, three and two-tenths men to one woman. 7. The condition is frequently associated with diabetes, but coronary patients with diabetes do not die earlier than those without diabetes. 8. No etiologic relationship could be determined with infectious diseases or foci of infection, or with the use of alcohol or tobacco.

Florida Medical Association Journal, Jacksonville

19: 361-410 (March) 1933

- Medical Pioneering in the South. J. E. Boyd, Jacksonville.—p. 371.
Some Thoughts on Economics of Charity Problem. A. H. Freeman, Ocala.—p. 378.
Treatment of Perforated Ulcers of Stomach and Duodenum. H. V. Weems, Sebring.—p. 380.
Abdominal Hemorrhage: Report of Case. C. C. Webb and H. L. Bryans, Pensacola.—p. 382.

Illinois Medical Journal, Chicago

63: 193-288 (March) 1933

- Acute Surgical Abdominal Conditions in Children. B. Portis, Chicago.—p. 222.
*Carcinoma of Tongue, with Especial Reference to Treatment by Irradiation. J. C. Beck and M. R. Guttman, Chicago.—p. 227.
Appendicitis Mortality in One Thousand Six Hundred and Five Cases. C. E. Black, Jacksonville.—p. 231.
Surgical Mortality and Morbidity and Factors Controlling Same. R. K. Packard, Chicago.—p. 239.
Socialized Medicine in Present-Day America. S. J. Kopetzky, New York.—p. 246.
*Surgical Relief of Pain in Peripheral Circulatory Diseases of the Feet. S. Perlow, Chicago.—p. 248.
*Treatment of General Paresis by Typhoid Vaccine and Electric Cabinet. E. T. Hoverson, G. W. Morrow and R. O. Hawthorne, Kankakee.—p. 252.
*Use of Convalescent Serum for Prevention and Attenuation of Measles. S. O. Levinson, Clarice McDougall and W. Thalheimer, Chicago.—p. 258.
The Family Physician. G. L. Servoss, Reno, Nev.—p. 266.
Emergency Relief for Medical and Surgical Aid. J. L. Rosengard, Chicago.—p. 269.
Significance of Electrocardiograph to General Practitioner. J. G. Carr, Chicago.—p. 271.
Acute Suppurative Thyroiditis: Report of One Case. M. L. Weinstein, Chicago.—p. 275.
Tuberculosis in Childhood. M. Pollak, Peoria.—p. 278.

Carcinoma of Tongue.—Beck and Guttman state that malignant epithelial growths of the tongue vary in their histologic structure, biologic course and response to irradiation. Adult, fully differentiated carcinomas are best treated by endothermic excision, if small and localized in the anterior portion of the tongue. Anaplastic, embryonic, undifferentiated growths are best treated with radiation, preferably the 4 Gm. bomb and in association with interstitial radium or radon, if necessary. The gland-bearing area of the neck must receive appropriate

attention in every case. When no palpable glands are present in the neck, prophylactic irradiation is necessary, preferably with a 4 Gm. pack. Palpable glands, secondary to a fully differentiated primary growth in the tongue, are best treated by a radical gland resection in conjunction with radiation. Palpable glands, secondary to an anaplastic undifferentiated primary growth, are treated with radiation alone, and surgery on the neck is contraindicated.

Relief of Pain in Diseases of Feet.—Perlow believes that relief of pain is a major problem in the treatment of peripheral circulatory disturbances of the lower extremities. To relieve the pain in such cases, the painful area must be accurately outlined and the nerves that supply it with cutaneous fibers injected with alcohol. To attempt to inject the nerve with alcohol through the skin is dangerous, because sloughing of the tissues will result. It is safer to isolate the nerve through a small incision. Under local anesthesia with a 1 per cent solution of procaine hydrochloride the desired nerve is isolated above the ankle, and from 0.5 to 2 cc. of a 95 per cent alcohol solution is injected directly into the trunk. The nerve is then dropped back into place and the wound closed with fine catgut or silk. The surrounding tissues should be protected from the alcohol. Because of the poor healing power of the tissues with which one is dealing, it is essential to isolate the nerve trunk high up above the ankle and to work through as small an incision (1 by 1½ inches) and with as little injury to the tissues as possible. This requires a detailed knowledge of the course of the various nerves and their relations to the surrounding tissues, especially the adjacent blood vessels, as injury to the already inflamed artery may easily swing the course of events from cure to gangrene.

Treatment of Dementia Paralytica.—Hoverson and his associates gave, over a period of three years, 124 male patients suffering from dementia paralytica a total of 4,198 injections of typhoid vaccine. Arsenicals and mercurials followed. All the patients received an initial injection of 50 million killed typhoid bacilli. Subsequent doses were always increased, even when no satisfactory temperature response was obtained. Dosages as high as 27 billion killed typhoid bacilli were given. Of the 124 patients 30 died, 6 escaped, 43 improved, the progress of the disease was checked in 16, 6 deteriorated, the treatment was discontinued in 9, and 14 were discharged. Of the 14 patients who improved sufficiently to be discharged, 11 are now self supporting. The authors also treated 32 dementia paralytica patients by hyperpyrexia, using an electrical cabinet, especially constructed for them, to furnish the source of external heat. They conclude that the electrical cabinet offers a safe and efficient means of maintaining hyperpyrexia. There is a close correlation between the number of hours a high temperature is maintained and the clinical results obtained. The treatment is carried out without subjecting the patient to any really high external heat. The highest temperature recorded in the cabinet itself was 126 F. In the course of the usual treatment the temperature of the air about the patient ranges from 120 to 126 F.

Measles Convalescent Serum.—Levinson and his associates treated 287 measles contacts with measles convalescent serum, obtaining complete protection in 60 per cent and attenuation of the disease in 33 per cent. The minimum dose employed should not be less than 5 cc. The age, weight, general physical condition, presence of some other infection, nature of contact, length of contact, and interval elapsing between initial contact and injection should be considered in determining the necessary amount of serum to make an adequate dose. Every case should be individualized and, depending on the factors influencing the efficacy of the serum, the proper dose and optimal time of administration should be decided to produce the desired result for each case. It is preferable to allow the development of sero-attenuated measles, with its resultant active immunity, except in sick or poorly nourished patients. In these patients, complete protection should be attempted under these adverse conditions, and at some future and more favorable time, on reexposure of the child, the usual plan of sero-attenuation can be followed. Serum from patients who have had measles within two or three months seems to be just as protective as that from recent convalescents. Twenty-five measles contacts received adult pooled normal serum with complete protection in 56 per

cent and sero-attenuation in 40 per cent. Pooled normal adult serum in amounts of from 20 to 40 cc. makes an effective substitute for convalescent serum and can be used with confidence.

Journal of Biological Chemistry, Baltimore

99: 663-813 (Feb.) 1933

- Free Energies of Formation of Aqueous d-Alanine, l-Aspartic Acid and d-Glutamic Acid. H. Borsook and H. M. Huffman, Pasadena, Calif.—p. 663.
- Studies on Arginine: III. Arginine Content of Vertebrate and Invertebrate Muscle. Audra Arnold and J. M. Luck, Pacific Grove, Calif.—p. 677.
- Digitalis Glucosides: VI. Oxidation of Anhydrodihydrodigitoxigenin: Problem of Gigitoxigenin. W. A. Jacobs and R. C. Elderfield, New York.—p. 693.
- Use of Cysteine Cuprous Mercaptide in Determination of Cystine. H. B. Vickery and A. White, New Haven, Conn.—p. 701.
- Diet and Blood Cholesterol in Normal Women. Ruth Okey and Dorothy Stewart, Berkeley, Calif.—p. 717.
- Analysis of Whole Blood: IV. Determination of Glutathione. S. R. Benedict and Gertrude Gottschall, New York.—p. 729.
- Isoelectric Point of Insulin: Electrical Properties of Adsorbed and Crystalline Insulin. O. Wintersteiner and H. A. Abramson, New York.—p. 741.
- Biuret Reaction: III. Biuret Reaction of Amino Acid Amides. Mary M. Rising and P. S. Yang, Chicago.—p. 755.
- Equilibria in Formol Titration. M. Levy, New York.—p. 767.
- Simultaneous Study of Constituents of Urine and Perspiration. H. H. Mosher, New York.—p. 781.

Journal of Nervous and Mental Disease, New York

77: 121-232 (Feb.) 1933

- Science in Clinic as Exemplified by the Life and Work of Joseph Babinski. J. F. Fulton, New Haven, Conn.—p. 121.
- Emil Kraepelin, Psychiatrist and Poet: Reproduction of Schwalbe's Discussion. Louise Brink and S. E. Jelliffe, New York.—p. 134.
- Time of Appearance of Epileptic Seizures in Relation to Age, Duration and Type of Syndrome. Helen Hopkins, San Francisco.—p. 153.
- Occurrence of Rare Phenomena in Dementia Praecox. Johann Susmann Galant, Moscow, U. S. S. R.—p. 163.
- Intravenous Pharmacodynamic Study of Autonomic Nervous System in Cryptogenic Group of Convulsive States. J. Notkin, New York.—p. 167.

Journal of Urology, Baltimore

29: 121-233 (Feb.) 1933

- *Conservative Treatment of Hydronephrosis by Resections of Renal Pelvis and Other Plastic Operations. W. Walters, Rochester, Minn.—p. 121.
- Further Experience with Aseptic Nephro-Ureterectomy. E. Beer, New York.—p. 135.
- Experimental Production of Urinary Calculi. C. C. Higgins, Cleveland.—p. 157.
- *Critical Study of Ureteral Calculi: Based on Series of Seven Hundred and Fifty-Eight Private Cases. A. Ravich, Brooklyn.—p. 171.
- Specificity of Pathogenic Infections of Kidney. H. T. Beacham, New Orleans.—p. 197.
- Primary Tuberculosis of Prostate. H. C. Sweany, Chicago.—p. 217.
- Unique Congenital Anomaly of Kidneys. E. Groseclose and O. Swineford, Jr., University, Va.—p. 227.

Treatment of Hydronephrosis.—According to Walters, in the presence of a renal parenchyma the function of which is sufficiently normal, complete removal of the obstructing factors producing the hydronephrosis should give relief of the obstructive symptoms, and the pelvis and calices should return to within reasonably normal limits of size. In his experience, resection of the hydronephrotic renal pelvis gives excellent results in treatment of hydronephrosis in properly selected cases: complete relief of obstructive symptoms followed bilateral resection of the renal pelvis with reduction of the pelvis and calices to within normal limits of size in two of his patients. Ureteropyeloneostomy has relieved, over a period of almost four years, hydronephrosis in a solitary kidney, in which obstruction was complete at the time of the operation. If one should choose to reimplant the ureter into the dependent part of the renal pelvis, accurate anastomosis should be made between the cut end of the ureter and the opening made in the pelvis, for any redundant portion of the ureter extending into the pelvis may serve as an obstructing valve. Conservative procedures, such as resection of the renal pelvis, reimplantation of the ureter, or removal of such obstructions as peripelvic tissue, are most strikingly indicated when the hydronephrosis is bilateral, or, if it is unilateral, when sufficient renal parenchyma remains to justify its preservation. The necessity for conservative procedures for relief of the obstruction when the kidney is solitary is apparent. The best procedure is the one that produces adequate and complete relief of the obstruction, with minimal disturbance of the renal pelvis or ureteral tissues.

Study of Ureteral Calculi.—Ravich states that, of all the etiologic theories which had been advanced, urinary stasis seems to be the only constant factor necessary for a stone to form in the urinary passages. The chemical character of the stone seems to depend on the pH of the urine, which may change from time to time and accounts for the different laminae so often demonstrated in stones. Calculi seem to form when, as a result of urinary stagnation, some change occurs in the secretory function of the tubular epithelium causing coalescence or diminution of the protective colloids and consequent precipitation of the unattached crystalloids. Trauma, faulty diet, infection and foreign bodies are often contributory causative factors in the presence of stasis. The 2:1 ratio of ureteral calculi in males and the 80 per cent incidence in adults of from 21 to 50 years of age correspond with the greatest incidence of inflammatory conditions of the adnexa in males and females. This is borne out by the fact that of the 393 prostatic examinations recorded only 82, or 21 per cent, showed what appeared to be normal prostates and seminal vesicles, the remainder showing some degree of recognizable pathologic condition. The passage of ureteral stones is hindered by physiologic narrowings, kinks, strictures, fixation of the ureter and atony of the ureteral musculature. Of the 758 private cases of ureteral calculi that the author treated during the past ten years, about 69.8 per cent were in men and 30.2 per cent in women. The roentgenogram was positive in approximately 90 per cent, and most of the remainder were diagnosed by the wax tip catheter, which is an important diagnostic measure. Approximately 83.6 per cent of the patients required cystoscopic manipulation, 6.3 per cent passed their calculi spontaneously, and 11.2 per cent were operated on without a single mortality. Recurrence was noted in 3.4 per cent, chiefly in those patients who refused follow-up treatment by ureteral dilation.

Kentucky Medical Journal, Bowling Green

31: 73-124 (Feb.) 1933

- Differential Diagnosis and Handling of Acute Abdomen. L. R. Ellars, Louisville.—p. 74.
- Acute Gallbladder Disease. W. H. Smith, Danville.—p. 78.
- Unilateral Blindness Result of Blow on Head. A. O. Pfingst, Louisville.—p. 81.
- *Relative Value and Dangers of Spinal and Inhalation Anesthetics. U. H. Smith, Louisville.—p. 82.
- Treatment of Compound Fractures. C. R. Petty, Lynch.—p. 88.
- *Treatment of Generalized Infections by Blood Transfusions. W. I. Hume, Louisville.—p. 93.
- Differential Diagnosis and Treatment of Chronic Colitis. S. A. Overstreet, Louisville.—p. 96.
- Bilateral Sarcoma of the Tonsil. W. R. Pryor, Louisville.—p. 104.
- *Application of Physiology of Respiration to Some Diseases of Respiratory Mechanism: Demonstration of McCormack Apparatus for Administering Carbon Dioxide and Oxygen, with Metric Control. R. L. McCormack, Louisville.—p. 107.
- Activities of Department of Psychiatry of the University of Louisville School of Medicine. S. Ackerly, Louisville.—p. 114.
- Adenoma-Carcinoma of Cervix: Report of Case. L. W. Frank, Louisville.—p. 118.

Spinal and Inhalation Anesthetics.—Smith gives the values of spinal anesthesia as follows: 1. There is no irritation to bronchial and pulmonary mucous membranes, and consequently fewer pulmonary complications. 2. Complete muscular relaxation is obtained, requiring less manipulation of viscera. 3. There is less postoperative nausea and there are fewer gas pains. 4. There is less dehydration, as fluids may be given during and immediately after operation. 5. There is a maintenance of cooperation between the patient and the surgeon. 6. It probably offers a safer anesthesia in cases of hypertensive heart disease. 7. Patients are grateful, especially if they have previously had disagreeable after-effects from inhalant anesthetics. The dangers of spinal anesthesia are in: (1) operations above the diaphragm, (2) extremely low blood pressure, (3) brain and spinal cord disorders, (4) skin infections about the site of spinal puncture, and (5) the psychic attitude of patients who object to being conscious while the operation is in progress. The value of inhalation anesthesia lies in operations above the diaphragm, in unconsciousness for the patients who demand it, and in cases of extremely low blood pressure. Its dangers are possible pulmonary complications, changes in blood chemistry with toxicity, metabolic disturbances and dehydration. There are advantages and disadvantages for both types of anesthesia. The selection of either type should be made with due delibera-

tion, and when there is no particular choice to be made the decision should be left with the patient.

Treatment of General Infections.—Hume believes that generalized infection, blood poisoning, blood stream infection, septicemia and septicopyemia designate one of the most dreaded conditions. Early supportive treatment to raise resistance—even transfusions of blood in certain cases with threatening localized infection, weakness and anemia—are apt to be more effective before than after blood stream invasion. Once blood stream infection sets in, treatment should consist of surgery to eradicate sources of infection, if such sources can be found, and if they lend themselves to surgical treatment; supportive treatment such as rest, proper care, proper food, liquids, elimination and transfusions of blood; the use of antiseptics intravenously, and anti-serums and vaccines. Blood transfusion in septicemias, except in occasional cases, has been rather disappointing, but the author regards it as ranking next to surgery in importance in the treatment and as the chief means of supporting the patient. He uses it regularly and sometimes repeatedly. He concludes that, in the unfavorable reactions occurring after transfusions, incompatibility is most to be feared, and unfailing care should be exercised in grouping and cross-matching bloods; also more care should be exercised in the selection, examination and preparation of donors.

Physiology and Some Diseases of Respiratory Mechanism.—According to McCormack, departures from the normal physiologic balance should be treated to correct that balance. The control of the administration of gases is accurate and a response of the tissues is immediate. The knowledge of the chemical equations, of normal existence when compared with the departure from normal in pathologic conditions, dictates the character and amount of gases to be supplied. Nature knows few irreversible equations. Oxygen should not be used alone to correct these pathologic physiologic conditions. Carbon dioxide and oxygen are always present in their normally varying proportions in the tissues and are dependent on each other, during normal life; therefore, also in pathologic conditions. Carbon dioxide and oxygen, administered correctly and early, will reduce the present fetal mortality. Early proper carbon dioxide and oxygen therapy will reduce the mortality in pneumonia as well as shorten the duration of the illness and lessen the incidence of complications. Carbon dioxide and oxygen mixtures must be varied in each case and at different times in each case; therefore, ready-made mixtures are inadequate when the skilled physician is in charge.

Michigan State M. Society Journal, Grand Rapids

32:75-154 (Feb.) 1933

- Value of Roentgen-Ray Method in Diagnosis and Control of Treatment of Tuberculosis. G. E. Richards, Toronto, Canada.—p. 75.
Periodic Health Examination History Taking. C. G. Jennings, Detroit.—p. 85.
Routine Physical Examination. H. A. Freund, Detroit.—p. 90.
Comments on Neurologic Examination and Diagnostic Procedures. C. D. Camp, Ann Arbor.—p. 92.
Embolism of Pulmonary Artery: Two Case Reports. G. G. Rieckhoff and V. J. Turcotte, Detroit.—p. 95.
*So-Called Essential Uterine Bleeding. N. R. Kretschmar, Ann Arbor.—p. 98.
Saving the Perineum. J. E. Cooper, Battle Creek.—p. 100.
General Aspect of Vesical Calculi. R. Rosen, Detroit.—p. 102.
Streptococcus Meningitis: Report of Case with Recovery. N. Canfield, Ann Arbor.—p. 108.
*Undulant Fever (Brucella Infection) in Children. J. F. Sander, Lansing.—p. 109.
Important Chemotherapeutic Possibility: Liberation of Nascent Iodine by Roentgen Irradiation After Intravenous Administration of an Iodine Compound. B. Hughes and A. Binz, Berlin, Germany.—p. 113.

Essential Uterine Bleeding.—Kretschmar examined the records of seventy patients all under the age of 25. The patients entered the hospital with a chief complaint of excessive bleeding and in no instance was there any gross evidence of pathologic changes in the pelvic organs. These cases are usually diagnosed as essential uterine bleeding or idiopathic uterine bleeding. A fairly large proportion of the patients of this type (86 per cent in the author's series) present a basal metabolic rate below zero but frequently within the generally considered lower limit of normal, or minus 16 per cent. Most of these patients also have a glandular hyperplasia of the endometrium (80 per cent). The careful use of thyroid extract in doses sufficient to raise the

basal metabolic rate above zero and to maintain it is beneficial in a large proportion of cases (73.9 per cent). Curettage is of limited therapeutic value and is seldom indicated, except when it seems advisable to rule out malignant disease of the uterus. The roentgen rays, radium and hysterectomy are effective in the treatment of this condition but should be used only as a last resort in young women. The author states that evidence from his series and other recent contributions indicates that basal metabolic rate determinations within the generally considered low limit of normal minus 16 per cent may be definite evidence of mild hypothyroid states which can be benefited by the careful administration of thyroid extract. If this is true, the limit of normal for minus rates should be changed.

Undulant Fever in Children.—Sander reports six cases of undulant fever in children aged from 17 months to 11 years. He believes that the incidence of Brucella (Alcaligenes) infection is much more common in children than is suspected; also that a great many of these cases are being persistently misdiagnosed as influenza or "intestinal flu," summer complaint, rheumatic fever, malaria, tuberculosis, adenoid and tonsil infection, gastroenteritis, worms, teething, and "what not." He urges that children, presenting a clinical syndrome similar to any of the mentioned complaints, and in whom these other common diseases can be positively ruled out, be given the nucleoprotein skin test and that their blood be tested for phagocytic activity against Brucella abortus. If their blood cells show a lack of phagocytic activity, he believes that the children should be given intramuscular injections of brucellin until their cells show high phagocytic activity for Brucella in vitro. An agglutination test should be done with Brucella abortus in every case, but if the test is negative, it does not necessarily follow that the patient does not have undulant fever. Other tests are necessary to eliminate this disease, the intradermal and opsonocytaphag test.

Minnesota Medicine, St. Paul

16:73-150 (Feb.) 1933

- Functional Gastro-Intestinal Disturbances. C. B. Wright, Minneapolis.—p. 73.
*Cardiac Neurosis. H. E. Richardson, St. Paul.—p. 78.
Treatment of Affective Disorders. J. C. Michael, Minneapolis.—p. 81.
Element of Fear in Development of Functional Disorders. A. D. Hoidale, Tracy.—p. 84.
Appeal of Quackery to the Nervous Invalid. W. C. Alvarez, Rochester.—p. 86.
Medical Practice in Norway. I. Sivertsen, Minneapolis.—p. 92.
Nasal Catheter Suction Siphonage: Its Uses and Technique of Its Employment. O. H. Wangersteen and J. R. Paine, Minneapolis.—p. 96.
Diagnosis of Laryngeal Disease. L. R. Boies, Minneapolis.—p. 101.
*Prophylaxis of Postoperative Pulmonary Atelectasis, with Especial Reference to Use of Carbon Dioxide Hyperventilation. G. S. Bergh, Minneapolis.—p. 105.
Correlation Between Clinical and Roentgen-Ray Findings in Tuberculous Individuals. H. A. Burns and B. Borreson, Ah-Gwah-Ching.—p. 119.
Tuberculosis Survey in a Private Hospital. W. Mills and C. A. Stewart, Minneapolis.—p. 122.
The Hard of Hearing Problem. M. W. Wheeler, St. Paul.—p. 126.
Medical Views of a Country Doctor. R. V. Williams, Rushford.—p. 129.
Intestinal Intussusception in Infants: Report of Unusual Case. L. F. Richdorf and J. M. Hayes, Minneapolis.—p. 131.
*Office Management of Sterility Cases. F. E. Kliman, Duluth.—p. 134.

Cardiac Neurosis.—Richardson states that cardiac neurosis is the persistent fear of premature death or invalidism through the medium of heart disease. The latent potentialities for this or other neuroses are present in all of us but need the right set of circumstances and events for development. Persons with unstable nervous systems and poor endowments from parents are rendered more susceptible. Any circumstance that sufficiently excites fear in relation to the heart may be the starting point of a cardiac neurosis. This basic fear may be aggravated by improper handling by physicians. A diagnosis of cardiac neurosis should be made only after the complete history, physical examination, and graphic records (if available) have ruled out all other possibilities, and then only reluctantly. Cardiac neurosis can and should be adequately handled by the man in general practice, as well as by the internist or cardiologist, except in those patients with a true anxiety neurosis with cardiac fixation who may eventually have to be referred to the neurologist. Cardiac neurosis, in one degree or another, is so widespread as to demand one's careful attention and sympathetic consideration rather than a belittling attitude, or one of contempt, which it so often calls forth.

Prophylaxis of Postoperative Pulmonary Atelectasis.—According to Bergh, atelectasis in some degree is the most frequent of postoperative pulmonary complications, and it merits the serious consideration of the surgical profession. The most widely used prophylactic procedures are hyperventilation induced by administration of carbon dioxide and postural measures, including frequent changes of position to prevent the accumulation of secretions in dependent portions of the lung and, in cases in which there is copious secretion, postural drainage. As adjuncts to these procedures, various other measures have been suggested. Among these are the avoidance of tight binders that embarrass the respiratory movements, voluntary coughing, the administration of expectorants and the elimination of the preoperative administration of atropine. There is disagreement as to whether or not morphine should be given, but most investigators believe that its use should be restricted to the extent that it does not interfere with the cough reflex. Pain, however, should be controlled. The inhalation of carbon dioxide produces an increase in the rate and depth of respiration and also causes the thorax to be maintained in a state of greater expansion. This distends the lung and tends to open areas of atelectasis. It also produces violent movement of the tracheobronchial tree, tends to dislodge adherent mucus and thus opens the air passages. The effects of carbon dioxide inhalation are transient and disappear when the administration of the gas is discontinued. The three principal groups of patients who require postoperative hyperventilation are those who undergo abdominal operations, those who have excessive bronchial secretion and elderly and debilitated patients. Since the beneficial results of carbon dioxide inhalation are temporary, it is recommended that the hyperventilation be repeated at frequent intervals. In most cases three or four administrations a day are sufficient, but there is a considerable number of patients who require more frequent hyperventilation. It is suggested that each administration be continued over a period of three minutes, with a mixture of 10 per cent carbon dioxide and 90 per cent oxygen.

Office Management of Sterility Cases.—Kliman believes that sterility is found in about 20 per cent of all married women. Two day dysmenorrhea of the nonobstructive type occurs in about 85 per cent of all sterile women. Cure of the dysmenorrhea frequently corrects the sterility, since the two conditions are often of common origin. About 90 per cent of sterile women complain of pain and leukorrhea, and both these symptoms indicate intrapelvic inflammation. General disturbances such as chronic alcoholism, anemia and syphilis should receive appropriate treatment. Inflammatory lesions of the uterus and adnexa should be treated by means of vaginal douches, sitz baths, foreign protein therapy, and electrical cauterization of the cervix. Uterine displacements should be corrected and maintained by means of a pessary. When endocrine disorders are suspected, the use of thyroid, anterior pituitary preparations and the various sex hormone preparations are often of benefit in regulating the menstrual cycle. When the normal menstrual cycle has replaced a previous irregularity, the Dickinson insemination test may be tried after all other treatments have failed to produce the desired results.

Nebraska State Medical Journal, Lincoln

18: 41-80 (Feb.) 1933

*Prostatectomy and Transurethral Prostatic Resection Compared. E. Davis and C. A. Owens, Omaha.—p. 41.

*Blood Sedimentation Test in Differential Diagnosis of Lower Right Quadrant Disease. M. Grodinsky, Omaha.—p. 47.
Prognosis in Surgery of Abdomen: Acute Appendix and Acute Pancreatitis. J. E. Summers, Omaha.—p. 53.

*Treatment of Cardiovascular Syphilis. R. L. Traynor, Omaha.—p. 57.
Progress of Surgery: Review of Literature for the Last Six Months of 1932. H. H. Davis, Omaha.—p. 60.

Wiring Aneurysm of Thoracic Aorta. M. Emmert, Omaha.—p. 63.
Report of Committee on Medical Education and Hospitals. J. S. Welch, Lincoln.—p. 66.

Traumatic Rupture of Intestine in Hernial Sac. C. H. Waters, Omaha.—p. 68.

Prostatectomy and Transurethral Prostatic Resection.—Davis and Owens believe that transurethral prostatic resection, properly employed in selected cases, is valuable. The majority of opinion indicates that this procedure will partially replace, but will not supplant, prostatectomy. What type and what per-

centage of obstructing prostates may be best removed by resection or by prostatectomy remains to be determined. These questions may be answered only by an impartial analysis of end-results. The chief advantage offered by the transurethral method is a decreased period of hospitalization. Preliminary drainage, preceding resection, however, is just as essential as before prostatectomy. It seems doubtful whether the transurethral method, considering the mortality rate, the immediate functional results and the ultimate functional results, offers the patient as great a degree of assurance of continued health and comfort as does perineal prostatectomy. It is likely that the personal equation will come to be an important factor in answering these questions. Each must compare his own results.

Blood Sedimentation Test.—Grodinsky used Linzenmeier's sedimentation test as modified by Friedlaender in the differential diagnosis of inflammatory pelvic diseases, noninflammatory pelvic conditions, diseases of the urinary tract and appendicitis. From this study he concludes that the blood sedimentation test is a simple and reliable means of diagnosis and prognosis in general surgical conditions, often surpassing the blood count in value. It is of particular value in the differential diagnosis of appendicitis from other pathologic conditions of the lower right quadrant of the abdomen.

Treatment of Cardiovascular Syphilis.—Traynor points out that, in treating an otherwise healthy young adult with primary or secondary syphilis, a so-called routine treatment has its place. A course of arsphenamine or neoarsphenamine injections, a course of mercury or bismuth compounds with rest periods at intervals, constitute the routine, but when such vital organs as the heart, liver or brain are involved one faces an entirely different problem. One should never institute treatment on the basis of a positive Wassermann reaction alone; one must first study the patient and determine the state of his aorta, heart, kidneys and nervous system. The patient may and usually does need many of the therapeutic measures that the non-syphilitic cardiac patient requires. Rest, both physical and mental, digitalis, diuretics, nitrites, morphine, and so on, all have their place. When congestive heart failure is present, all antisyphilitic drugs should be withheld until compensation has been restored. When the usual measures for heart failure have failed to restore compensation, mercury and iodides may be given as a last resort with an occasional good result. In coronary disease, a thorough preparatory course of mercury and iodides should precede the use of the arsenicals. Neoarsphenamine is preferable to arsphenamine. It should be started in small doses, not over 0.1 Gm. If no untoward symptoms develop after the first few doses, the dose may be cautiously increased. An aortic aneurysm of any size can never be cured. In the smaller types an arrest of growth may be obtained. Even in the larger tumors, symptomatic relief may be afforded, possibly as a result of the liberation of adhesions resulting from the mediastinitis or periaortitis.

New England Journal of Medicine, Boston

208: 351-406 (Feb. 16) 1933

Premature Separation of Normally Implanted Placenta: Review of Eighty-Seven Cases. A. S. Troupin, Boston.—p. 351.

*End-Results in Injection Treatment of Varicose Veins: Report on Three Hundred and Fourteen Cases from Peripheral Circulatory Clinic of the Massachusetts General Hospital. H. H. Faxon, Boston.—p. 357.

*Clinical Trials with So-Called Female Sex Hormones. J. Rock, Boston.—p. 362.

House Bill 106. S. Rushmore, Boston.—p. 369.

Progress in Dermatology. H. P. Towle and J. Grund, Boston.—p. 374.

Injection Treatment of Varicose Veins.—Faxon presents the end-results of 314 cases of varicose veins treated by the injection method. Recurrences followed in 63 per cent in an average period of 1.4 years, 25 per cent of the total number showed new varicosities, 28 per cent were relieved of pain, 19 per cent were relieved of edema and 61 per cent of the ulcers were healed. In a large number of the cases the patients' attitude toward the results was more favorable than was deserved. The author's technic was to have the patient sit on the edge of the table with the feet on a chair; injection at two points was ordinarily done at one sitting with an average dose of 1.5 cc. at each point. With the smaller varices the patient was allowed to stand in order to distend the vein during

the injection. In the majority of cases the treatments were started at the junction of the middle and lower thirds of the leg and subsequent injections were given at progressively higher levels. Immediate pressure with a piece of gauze was made over the puncture wound directly following the injection when the needle was withdrawn. Woven supporting bandages were worn during the course of treatment and for two weeks thereafter. Large varicosities above the knee were constricted by wide adhesive strapping after injection. The position of the varicosities was marked out on a stamped diagram of the legs at the first treatment and the site of each injection was marked on this chart following each treatment. When no further varicosities could be found to inject, the patient was instructed to report at the end of three months and further injections were carried out at that time if any unthrombosed veins could be discovered. The author concludes that primary high ligation of the main saphenous trunk, when it is varicose, is a necessary adjunct to the injection method of treatment, if the best results are to be secured. The practice of stripping the vein, in part at least, of its blood before injecting, and restricting the injection solution to the area treated for an appreciable time after injecting will give better results when the larger varicosities are being dealt with. Continued support of ulcer cases over an indefinite period after the lesion has healed is often desirable. Quinine hydrochloride and urethane is the preparation of choice, although exceptions to its exclusive use may arise.

Female Sex Hormones.—Rock concludes that the therapeutic value of the ovarian hormone, at least in the amount in which it can be given to and paid for by patients, is limited, and that the effect of much larger doses is still undetermined. So far, experience with these and other endocrine products gives little assurance that the effect of the hormone on the genital apparatus of women will be the same as on the genital apparatus of rats and rabbits. It has been shown that the so-called luteinizing hormone will relieve certain cases of atypical uterine bleeding. It will certainly not relieve all, and probably will permanently cure only a few. For carefully selected and properly diagnosed cases, it offers a superior method of treatment. It is to be hoped that all practitioners will guard against the unwarranted optimism which blatant advertising of these newer preparations engenders. This iniquitous deception of physicians is especially to be deplored if it tempts them to forget that bleeding from the vagina can be and often is caused not by simple endocrine disturbances but by cancer, which is a mortal disease if not diagnosed early or may become such during a time consuming series of useless but expensive injections of a mysterious endocrine excreted in the urine.

208: 407-468 (Feb. 23) 1933

Causes of Death Among Jews in New York City. C. Bolduan and L. Weiner, New York.—p. 407.

Presentation of a Case of Transplantation of Ureters into Rectum Because of Carcinoma of Bladder. H. C. Pitts, Providence, R. I.—p. 427.

*Separation of Symphysis Pubis: Report of Ten Cases Occurring During Delivery. B. F. Boland, Boston.—p. 431.

Study of Dorsalis Pedis and Posterior Tibial Pulses in One Thousand Individuals Without Symptoms of Circulatory Affections of Extremities. H. Morrison, Boston.—p. 438.

Relapsing Agranulocytosis: Case Report. M. Millman and C. L. Furcolo, Springfield, Mass.—p. 440.

Importance of Early Diagnosis and Careful Differentiation of Types in Chronic Arthritis. C. F. Painter, Boston.—p. 447.

Separation of Symphysis Pubis.—Boland reports nine cases of separation of the symphysis pubis (eight of his own and one of Hoy's), which occurred in 4,800 consecutive deliveries. Four of the cases occurred following normal delivery, two after falls during the prenatal period, and the other two as the result of forceps extraction. Normal deliveries were productive of separated symphyses more often than other agents of trauma in this series. The lesion occurred in one out of every 685 deliveries and is comparatively frequent. Pain and tenderness in the region of the pubic and sacro-iliac joints, peculiar gait and palpable separation at the symphysis are the most common symptoms. Roentgenograms confirm the separation and show sacro-iliac involvement. Treatment consists in the use of a fracture board or Bradford frame together with adhesive strapping, or a swathe sling and traction, to relieve the acuteness of the lesion. Correction of the gaping of the pubic and sacro-iliac

joints is essential for functional results. Cases previously separated will reparate in succeeding pregnancies. Orthopedic follow-up is essential for the relief of symptoms and restoration of function.

New York State Journal of Medicine, New York

33: 195-258 (Feb. 15) 1933

Acute Ruptured Appendicitis Complicating Chronic Leukemic Myelosis.

B. H. Rose, New York.—p. 195.

Diagnosis of Pulmonary Neoplasms. H. M. Moses, Brooklyn.—p. 199.

Diabetic Diet. A. H. Terry, Jr., New York.—p. 202.

Lipoid Diets: Case Report. A. Tow and H. F. Wechsler, New York.—p. 203.

*Present Status of Allergic Diseases. T. W. Clarke, Utica.—p. 205.

Speech Disorders as Medical Problem. S. Blanton, New York.—p. 215.

*General Hyperthermia with Heat Localization by Radiotherapy in Treatment of Pelvic Inflammatory Disease. W. Bierman and E. A. Horowitz, New York.—p. 218.

Present Status of Allergic Diseases.—Clarke points out that the present status of the allergic diseases would seem to be that practically all cases of urticaria, angioneurotic edema, seasonal hay fever, and most of the cases of uncomplicated asthma must be included in this category, that most cases of eczema not caused by direct irritation or inflammation of the skin are allergic, that many cases of chronic rhinitis and recurring bronchitis are of a similar nature, and that probably most cases of mucous colitis and some cases of indefinite gastrointestinal symptoms including pain, nausea, and tenderness are due to allergic lesions. The suggestion has been made that pylorospasm and gastric and duodenal ulcer may have an allergic origin. In the nervous system, migraine is commonly caused by allergy. Ménière's disease may be another manifestation of the same condition, and there is a probability that certain cases of epilepsy are of a similar nature. Certain acute arthritides and some cases of chronic arthritis are probably allergic. The allergist cannot cure all chronic incurables, but he certainly can cure certain cases previously considered incurable. The allergist does not ask that every case of bronchitis or abdominal pain be put through a course of skin tests, but he does ask that cases of asthma, eczema, urticaria and hay fever be given this opportunity of relief, that, when migraine has been present for years after eye strain, constipation and pituitary involvement have been eliminated, when chronic indigestion has made life miserable and medical aid has been unavailing, when a running nose persists in spite of the best local medical and surgical care, and when a child shows signs of beginning epilepsy without evident cause, the family physician offer these patients the chance of relief given by an appreciation of the possible allergic nature of these diseases, and refer them to the allergist for careful study.

Hyperthermia in Treatment of Pelvic Inflammatory Disease.—Bierman and Horowitz treated twelve patients presenting various pelvic inflammatory diseases with localized hyperthermia produced by the radiotherm. Five cases of subacute salpingitis and two postabortive pelvic infections improved rapidly. Three cases of chronic salpingitis improved. A case of gonorrheal arthritis was cured after one treatment. In one case of subacute salpingitis, a tubo-ovarian abscess requiring operation developed after radiothermy treatment. One large tubo-ovarian abscess was not much affected by two treatments. One drained abscess resolved rapidly. In order to produce a simultaneous increase of body temperature with a still higher increase in the temperature of the vagina, the authors employed the following method: With the patient in place between the condenser plates of the radiotherm, an electrode is placed in the vagina. This electrode is connected, through an ammeter, to a small auxiliary metal plate suspended near one of the large condenser plates of the radiotherm. Under these conditions the electrical field produced in the region between the electrode and the condenser plate opposite to the one near which the auxiliary plate is suspended is considerably higher than it is at any other part of the body. When the region to be heated is bilateral, the pick-up plate is placed first on one side and then moved to the other. With a pick-up plate of about 300 sq. cm. the distance between the pick-up and the condenser plate varies from 10 to 30 cm. The readings on the radio-frequency ammeter usually vary from about 1 to 2 amperes. With this technic it has been possible to develop temperatures

ranging from 110 to 116 F., as indicated by a mercury thermometer inserted in the vaginal electrode, while the temperature in the mouth is registered between 101 and 104 F.

Oklahoma State Medical Assn. Journal, Muskogee

26: 33-70 (Feb.) 1933

- Femoral Hernia. O. White, Oklahoma City.—p. 33.
Burn Contractures. J. F. Burton, Oklahoma City.—p. 36.
*Pellagra. C. C. Gardner, Atoka.—p. 38.
Public Health or State Medicine. W. G. Ramsay, Quinton.—p. 42.
Diverticulum of Urinary Bladder. B. A. Hayes, Oklahoma City.—p. 45.
Present Status of Coronary Disease. F. A. Willius, Rochester, Minn.—p. 47.
Tumors That Originate from Endocrine Dysfunction. W. W. Babcock, Philadelphia.—p. 60.

Pellagra.—Gardner states that acidosis, avitaminosis and anemia should all be considered in pellagra, instead of avitaminosis alone. The diagnosis of pellagra is usually made from the typical erythema, which is symmetrical and resembles sunburn, is on exposed surfaces, and is usually a duller red than erysipelas or sunburn. This progressively becomes darker until a dirty black chapped appearance is found. At times the eruption is macular. The preeruptive diagnosis is seldom made, but the following symptoms should cause one to think of pellagra: 1. Symptoms of neurasthenia and starvation acidosis—such as air hunger, collapse, great weakness and cardiac distress. 2. Symptoms that would suggest an incipient tuberculosis, but afebrile and with a negative lung examination. 3. History of an acute severe illness during which millions of erythrocytes were destroyed, as in acute malaria and lobar pneumonia, in which the oxygen carrying cells were diminished and the carbon dioxide increased. 4. History of indigestion, due to gallbladder infections, appendicitis, genito-urinary infections, bringing on a starvation acidosis, which, coupled with a food deficiency, due either to poverty or to digestive weakness, leads to anemia. In the treatment of pellagra, the following measures are indicated: (1) the relief of starvation acidosis by diet or by surgical removal of the entity interfering with digestion; (2) the removal of infected teeth and drainage of the sinuses; (3) the eradication of malaria and intestinal parasites; (4) the control of diarrhea by opiates and bismuth compounds; (5) the administration of sulpharsphenamine in 0.4 and 0.6 Gm. doses, which may arrest the progress of pellagra cases in which cerebrospinal symptoms are present, and (6) a balanced diet after infection has been removed and the conditions which interfere with hydrolytic cleavage of carbohydrates and suboxidation of the proteins due to hypochlorhydria, lack of bile—pepsin, and so on are obviated.

Philippine Islands Med. Association Journal, Manila

13: 65-118 (Feb.) 1933

- When and How Should a Woman Be Sterilized? F. Calderon, Manila.—p. 65.
Our Relations to the Public and the Medical Profession. B. J. Valdes, Manila.—p. 68.
Subdural Abscess of Otitic Origin: Report of Operated Case That Recovered. A. S. Fernando and C. D. Ayuyao, Manila.—p. 73.
Experiences with Goiters in the Philippines. H. A. Hall, Manila.—p. 77.
Evolution of Public Health in the Philippines. T. M. Gan, Manila.—p. 81.
Investigation on Practical Use of Percaine for Local and Spinal Anesthesia. J. S. Cuyugan, Zamboanga.—p. 89.
Plea for Cooperation Among Physicians. A. Villarama, Manila.—p. 93.

Philippine Journal of Science, Manila

50: 111-209 (Feb.) 1933. Partial Index

- Solar Ultraviolet Radiometry: I. Ultraviolet Limit of Sunlight. W. D. Fleming, Manila.—p. 185.
Chemical and Biologic Analyses of Tikiti Extracts. A. J. Hermans and F. Anido, Manila.—p. 189.
Serologic Study of Cerebrospinal Fluids in Philippine Monkeys Inoculated with Yaws, Syphilis, or Both. O. Garcia, Manila.—p. 199.
An Arthropod Associated with a Chronic Dermatitis Involving the Face. C. M. Africa, Manila.—p. 205.

Rhode Island Medical Journal, Providence

16: 17-32 (Feb.) 1933

- *Tribrom-Ethanol Anesthesia in General Surgery. A. V. Migliaccio, Providence.—p. 17.
Understanding and Treatment of Nervous Child. H. F. Corson, Providence.—p. 21.
Report of the Milk Commission of the Providence Medical Association. R. C. Bates, Providence.—p. 26.

Tribrom-Ethanol Anesthesia.—Migliaccio states that tribrom-ethanol is used merely as a basal anesthetic, but large

series of cases show that, in approximately 30 per cent of cases, the operation can be completed without the aid of supplementary anesthesia. If the anesthesia is deeper than desired, carbon dioxide, strychnine, caffeine, ephedrine or epinephrine can be used to hasten elimination and lighten anesthesia. In extra-abdominal operations, when supplementary anesthesia is necessary, local infiltration of procaine hydrochloride or the administration of gas-oxygen suffices. In abdominal operations, somewhat more nitrous oxide is used and greater relaxation can be obtained if the anesthetist administers about 1 ounce of ether through the gas machine just previous to the opening, and, again, before the closing of the peritoneum. The patients rarely realize that a supplementary anesthetic was administered. Tribrom-ethanol as a basal anesthetic can be used in practically every type of operation, but it is especially advantageous in nervous individuals, in operations about the head and neck, and in operations requiring considerable time. It offers special inducements to the gynecologist in combined vaginal and abdominal operations, because in these cases the vaginal work can be done with little or no supplementary anesthesia and gas-oxygen need not be given until the abdomen is prepared. In operations about the mouth there is no face mask to obstruct and interfere with the surgeon. Tribrom-ethanol is ideal in operations for hyperthyroidism, because in these cases the patient is asleep before he is even aware of the fact that he is being anesthetized, thus avoiding a great deal of unnecessary excitement and anxiety for the patient. Tribrom-ethanol anesthesia is contraindicated in advanced disease of the liver or kidneys, obesity, ulcerative diseases of the rectum, extreme cachexia, dehydration and debilitated elderly patients.

Southwestern Medicine, Phoenix, Ariz.

17: 43-76 (Feb.) 1933

- Pulmonary Tuberculosis with Acute Onset. C. S. Kibler, Tucson, Ariz.—p. 43.
What Can Be Done for the Far Advanced Case of Pulmonary Tuberculosis? J. J. Beatty, Tucson, Ariz.—p. 46.
*Scalenotomy. M. Clyne, Tucson, Ariz.—p. 50.
Classification of Nephritis from the Pathophysiologic Point of View. N. H. Keller, El Paso, Texas.—p. 52.
*Placenta Accreta: Report of Case with Review of Literature. R. K. Smith, Tucson, Ariz.—p. 55.
Convergent Squint, Its Cause and Treatment. H. L. Franklin, Phoenix, Ariz.—p. 58.
Mucocoele and Pyocoele of Frontal Sinus. O. W. Thoeny, Phoenix, Ariz.—p. 60.
Safest Milk Supply. F. A. Clark.—p. 61.
Traumatic Head Injuries: Review of Recent Literature. S. I. Bloomhardt, Phoenix, Ariz.—p. 65.
Id.: Management of Acute Brain Injury: Three Case Reports. R. B. Raney, Phoenix, Ariz.—p. 67.
Id.: Review of Hospital Cases. R. S. Flinn, Phoenix, Ariz.—p. 69.

Scalenotomy.—Clyne states that the severing of the scalenus muscles allows the first two ribs to sag and to a certain extent decreases the respiratory excursion of the first three ribs, thereby inducing a degree of rest in the region of the apex of the lung. In his series of sixty-six cases of scalenotomy, the phrenic nerve had been severed in twenty-two from six months to three years previously, and the resulting improvement had come to a standstill. Scalenotomy resulted in further improvement in twelve of the twenty-two cases. There were three cases of tuberculosis, chiefly apical, associated with asthma, and, because it was believed that full action of the diaphragm was indispensable to respiration in this complication, the phrenic nerve was not cut but scalenotomy alone was done. There was clinical improvement in two of these three cases. The combined operation was done in forty-one cases, with resulting improvement in twenty-five. In two of these cases pneumothorax had been established for a year or more, but with no improvement because of broad apical adhesions, and both of these cases were improved by the combined operation.

Placenta Accreta.—Smith reports a case of placenta accreta in a woman, aged 31, on whom a complete necropsy was performed. The characteristic features of this abnormality are partial or total absence of the decidua basalis and invasion of the musculature of the uterus by chorionic villi. In addition to repeated or too vigorous curettage, endometritis, submucous fibroid and previous manual removal as etiologic factors, the author's case adds the possible significance of previous cesarean section. The manual removal of the placenta at the time of

cesarean section would further increase the possibility of a hypoplasia of the endometrium, with a resulting tendency to placenta accreta. A review of the literature gives perforation and rupture of the uterus, hemorrhage, shock and sepsis as some of the causes of the condition. The author's case adds the danger of embolism from venous thrombosis. In the presence of an attached placenta with no descent of the cord and without bleeding, aseptic exploration under anesthesia should be made to determine the subsequent procedure. If no line of cleavage can be demonstrated, hysterectomy should be done.

Virginia Medical Monthly, Richmond

59: 637-702 (Feb.) 1933

Third of Century of Medical Education in United States: Critical Appreciation by General Practitioner. W. M. Dabney, Baltimore.—p. 637.

Personal Impressions of Transurethral Prostatectomy. W. W. S. Bulter, Jr., Roanoke.—p. 642.

*Osteomalacia. F. J. Wampler, Richmond.—p. 647.
Bilateral Congenital Anophthalmos: Report of Case. A. T. Hawthorne, Winchester.—p. 655.

Electrosurgery in Vesical Neck Obstructions. S. B. Cary, Roanoke.—p. 657.

Comments on Differential Diagnoses of Psychoneuroses and Psychoses. N. D. C. Lewis, Washington, D. C.—p. 660.

*Vomiting in Infancy and Childhood. T. D. Jones, Richmond.—p. 664.
Care of Cases of Traumatic Rupture of Male Urethra. F. R. Crawford, Kashing, China.—p. 670.

Convergence-Insufficiency and Divergence-Excess. E. Burton, University.—p. 672.

Bullet Wounds of Pericardium: Report of Unusual Case. L. W. Angle, Kansas City, Kan.—p. 675.

Colles' Fractures. F. M. Duckwall, Kingsport, Tenn.—p. 678.
Endocervicitis: Special Reference to Case Management. J. M. Howe, Washington, D. C.—p. 680.

Review of Present-Day Therapy of Alimentary Toxicosis. S. H. Rivers, Calvin.—p. 682.

Open Safety Pin in Esophagus of Month Old Baby: Case Report. E. G. Gill, Roanoke.—p. 685.

Osteomalacia.—Wampler states that deficient calcium in the diet, lack of exercise, bound feet, dark rooms, bad housing and lack of sunlight are contributing factors in osteomalacia. While children born of osteomalacic mothers do not show gross signs of rickets, Maxwell has shown by section of the bones that fetal rickets does exist. It is a disease largely of the female but it is by no means unknown in the male. The treatment at present is cod liver oil with viosterol. Some form of calcium should be prescribed along with this. Irradiated foods and viosterol can help much by supplying larger quantities of the vitamin without giving excessive quantities of cod liver oil. Ultraviolet radiation and sunshine are of great help. In the prevention of the disease, better food and more sunshine for all women should be urged and especially stressed for pregnant and puerperal women. If numbness occurs, 1 ounce (30 cc.) of cod liver oil should be taken daily.

Vomiting in Infancy and Childhood.—Jones points out that 20 per cent of vomiting in infancy and childhood may be due to intussusception, pyloric stenosis, pylorospasm, appendicitis, brain tumors, brain abscesses, hydrocephalus, acidosis, dentition or acute infections. He gives the characteristic symptoms in each condition and states that habit vomiting or rumination is not an infrequent type of chronic vomiting in the neurotic child. It is frequently preceded by sucking of the fingers. The characteristic features are the habitual movements of the lower jaw, to and fro movements of the tongue, and apparent attempts to swallow after feeding. The regurgitant type of vomiting is never forcible. Taylor and Morse report good results from tying up the lower jaw; others report good results from tying the hands so that the fingers cannot be placed in the mouth, from attracting the attention of the baby immediately after nursing by ringing a bell or by a rattle, or even from the use of a pacifier as a means of a diversion. The semierect position after feeding is likewise said to produce good results. Often the use of thick cereal feedings will promptly control the vomiting when the thinner liquids cannot be retained. Vomiting in the new-born may be due to gastro-intestinal irritation from swallowing maternal discharges. Attempts to force too early feedings will often cause vomiting in the new-born. It may also be due to toxemia and may frequently result fatally in the offspring of toxemic mothers. Vomiting in the new-born may be due to congenital defects in the gastro-intestinal tract. Vomiting is a prominent symptom in peritonitis from acute pyogenic infections in the new-born.

Wisconsin Medical Journal, Madison

32: 69-144 (Feb.) 1933

*Role of Upper Respiratory Infections as Cause of Death in Immature Infants. A. B. Schwartz, Milwaukee.—p. 77.

*Otitis Media and the Family Physician. J. P. Harkins, Madison.—p. 81.
Relation of Infections of Pelvic Organs and Diseases of the Eye. W. L. Benedict, Rochester, Minn.—p. 85.

Surgical Problem of Pelvic Endometriosis. E. S. Sullivan, Madison.—p. 90.

*Ocular Manifestations of Focal Infection. J. K. Trumbo, Wausau.—p. 94.

Pharyngeal Insufflation of Oxygen. E. A. Rovenstine, Madison.—p. 99.

*Obstetric Anesthesia and Analgesia in General Practice. A. E. McMahon, Glenwood City.—p. 102.

Infections of Upper Respiratory Tract.—Schwartz observed, at a children's hospital during a period of ten years, that infection of the upper respiratory tract is the largest single cause of death in the immature infant after the first two weeks of life. In an infants' hospital limiting its patients to nutritional problems, it was responsible for the death of 25 per cent of the immature infants. In a series of 157 immature infants, 45 per cent of the deaths were due to infection of the upper respiratory tract. In thirteen instances of death from pneumonia confirmed by necropsy, the respiratory infection developed after a two weeks stay in all but two instances. Children's hospitals, because of their unusually high mortality rate from infection of the upper respiratory tract, are not an ideal place for the care of immature infants. An obstetric floor of a general hospital, or supervised homes using the Speedwell technic, should give a lower incidence of respiratory infection and a lower mortality rate among immature infants.

Otitis Media.—Harkins points out that, like appendicitis, otitis media is to be feared because of its complications. Meningitis, brain abscess, lateral sinus thrombosis, and even lung abscess are the lurking possibilities one should keep in mind when undertaking the treatment of an innocent looking, inflamed middle ear. Otitis media is a common complication of all contagious diseases and diseases of the upper respiratory tract in childhood and early adult life. It is considered lightly by the public, by the family physician and oftentimes by the specialist. Its proper treatment consists of early diagnosis, early drainage and attention to the general well being of the patient. Removal of diseased tonsils and adenoids and the segregation and control of infectious diseases decrease materially the incidence of otitis media.

Ocular Manifestations of Focal Infection.—Trumbo states that iritis and retrobulbar neuritis are the two most common ocular diseases due to focal infection. The less common ocular manifestations of focal infection are corneal ulcers, blepharitis and tarsal cysts, conjunctivitis, episcleritis, increased lacrimation, optic neuritis and atrophy, recurring retinal hemorrhages, choroiditis, retinitis, vitreous opacities and cataract formation and disturbances of ocular motility. Focal infections as causes of ocular diseases must be considered as next in importance to syphilis and tuberculosis. More careful examination, especially dental, must be made, the ophthalmologist directing the investigation and retaining control of the patient. Conservation of vision and improvement in the general public health program of preventive medicine will result from the elimination of foci of infection that will be found as a result of more careful consideration of the focal causes of ocular diseases. The more general use of the intradermal tuberculin test is urged as a diagnostic aid in suggestive cases, after foci of infections are removed and no improvement is shown.

Obstetric Anesthesia in General Practice.—McMahon believes that morphine or pantopon and scopolamine in small doses in the first stage, with ether or chloroform inhalations to the obstetric degree in the second stage, constitutes a satisfactory obstetric anesthetic in the majority of normal cases. The Gwathmey method, or synergistic analgesia, is practicable and satisfactory. Twilight sleep is not to be recommended for use in the home. Sodium amytal, while quite satisfactory in hospital practice, is not well adapted to home use. Spinal anesthesia is unsurpassed for forceps deliveries, episiotomy and perineal repair but can hardly be recommended for routine use because of the frequent loss of the auxiliary forces following its employment. Caudal anesthesia has also been used to a certain extent in obstetrics. The results are not as successful as those obtained

with spinal anesthesia. The chief objection is the fact that the solution must be prepared fresh for each case. Furthermore, deformities in the sacral hiatus are quite frequently encountered, which make the administration difficult or impossible. The use of nitrous oxide or ethylene and oxygen is highly satisfactory, but their use is necessarily restricted to hospital practice.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

50: 1-80 (Spring) 1933

Surgical Adventure: Autobiographic Sketch. E. W. H. Groves.—p. 1.
Enlarged Prostate. A. R. Short.—p. 23.
Anterior Poliomyelitis, or Infantile Paralysis. H. Chitty.—p. 37.

British Journal of Children's Diseases, London

30: 1-82 (Jan.-March) 1933

*Periodic Group of Disorders in Childhood. W. G. Wyllie and B. Schlesinger.—p. 1.
Cerebral Obesity Due to Chronic Encephalitis Lethargica: Case. F. P. Weber and T. R. Hill.—p. 22.
Complete Transposition of Great Vessels of the Heart with a Patent Foramen Ovale: Case. W. M. Feldman and A. Chalmers.—p. 27.
Hereditary Knock Knee, with Recurrent Dislocation of Patella and Aplasia of Nails on Fingers and Toes. W. J. Rutherford.—p. 34.
Three Cases in Which an Eruption of Petechiae Followed Attacks of Vomiting. E. W. Goodall.—p. 39.

Periodic Group of Disorders in Childhood.—Wyllie and Schlesinger state that in the periodic group of disorders in children are included bilious attacks, cyclic, ketogenic or acetone-mic vomiting, recurrent pyrexial attacks and migraine. From a study of eighty cases, they collectively regard these disorders to be of common origin. The periodic attack is manifested clinically by a syndrome composed of vomiting, abdominal pain, headache and fever. A report is made of the occurrence, in some cases of vertigo, of raised blood pressure, lapses of consciousness and convulsions. The authors discuss the influence of heredity and the prevalence of the periodic group of disorders in families constitutionally predisposed, and the relationship between these disorders and allergy; they compare the effects of a ketogenic diet and the results of liver function tests in normal children and in those subject to the periodic syndrome, and they conclude from their investigations that the primary factor underlying the occurrence of these disorders in children is of nervous origin. The treatment of the periodic group of disorders is confined to preventive and palliative measures, as no specific therapy can overcome the factor of nervous instability on which they depend. Much importance has been attached to dietetic modifications, of which the low fat-high carbohydrate ratio is the most popular. The giving of dextrose, from 2 to 3 drachms (8 to 12 Gm.) three times a day, has been extensively advocated as a beneficial measure in preventing attacks. In many cases the authors have noted as much benefit from a normal well adjusted diet as from any of the modifications. A ketogenic diet has recently been advocated for the treatment of migraine. Baborka reports that in fifty patients between the ages of 16 and 66 the attacks were controlled in fourteen, and that twenty-five were benefited. In those cases in which a personal or a familial indication of allergy occurs, it is advisable to test for skin reactions and to try the effects of eliminating from the diet those articles to which a hypersensitivity is shown. The maintenance of regular evacuation of the bowels is of major importance. Constipation, with an excess of mucus, is usual and, presumably, has an adverse effect on the liver function. The most suitable remedies for this purpose are sodium bicarbonate, rhubarb powder or syrup of senna, given in small doses three times a day. Sepsis of the tonsils or sinuses should be treated when present. For the treatment of obstinate headaches, small doses of dried extract of thyroid and phenobarbital are sometimes efficacious. Errors of refraction must be corrected. Severe cases of cyclic vomiting are best treated by rectal and intravenous injections of saline and dextrose solution. Certain general principles requiring attention in the care of children susceptible to the periodic syndrome are the avoidance of excesses of mental or physical exhaustion or excitement.

British Journal of Physical Medicine, London

7: 193-212 (Feb.) 1933

D'Arsonval High Frequency Currents and Their Application. F. M. Allechin.—p. 195.
Sciatica and Its Treatment at Aix-les-Bains. F. G. J. Francon.—p. 197.
New Helio-Actinometer and Its Applications. H. Bordier.—p. 200.
Physical Therapy in Otorhinolaryngology. W. S. T. Neville.—p. 201.
Assessment of Nutrition. A. M. Critchley.—p. 202.

East African Medical Journal, Nairobi

9: 309-338 (Feb.) 1933

*Preliminary Note on Vector of Tropical Typhus in Kenya. J. I. Roberts and H. D. Tonking.—p. 310.
Influence of Obstetric Conditions on Vital Statistics in Uganda. A. Cook.—p. 316.
Rheumatic Fever in a Lumbwa Native: Case. R. A. W. Procter and G. M. Hargreaves.—p. 332.

Vector of Tropical Typhus.—Roberts and Tonking state that investigation of the fauna of houses from which tropical typhus has been reported suggested *Rhipicephalus pulchellus* and *R. sanguineus* as possible vectors. Guinea-pigs, when injected with emulsified *R. sanguineus* taken from a house in which a case of tropical typhus had just occurred, gave positive reactions pathognomonic of the disease, both clinically and histologically. The virus was passed through further guinea-pigs, which also gave typical reactions. The dog is the main host of the incriminated tick, but it will readily feed on human beings. The regular deticking of domestic dogs is strongly advocated.

Glasgow Medical Journal

1: 73-104 (March) 1933

Maister Peter Lowe. L. M. Watt.—p. 73.
Notes on Tropical Diseases Sometimes Seen in Home Practice: II. Trypanosomiasis, Undulant Fever, Helminth Infections, Schistosomiasis. R. Aird.—p. 82.

Irish Journal of Medical Science, Dublin

No. 86: 49-96 (Feb.) 1933

Primary, Secondary and Tertiary Tuberculous States and Value of Gastric Lavage as an Aid to Diagnosis. W. R. F. Collis.—p. 49.
*Excretion Urography. R. H. Mitchell.—p. 62.
Trachoma Prophylaxis. F. Lavery.—p. 77.

Excretion Urography.—Mitchell points out that the advantages of excretion urography are, chiefly, its simplicity and its freedom from instrumentation and risk to the patient. The advantage of obtaining bilateral pictures cannot be overestimated. Excretion methods often eliminate the necessity for instrumentation on more than one side. Excretion urography gives better cortical definition than retrograde urography; further, it is a physiologic method of viewing the urinary tract and gives a useful indication of the kidney function. It is especially indicated in cases in which it is impossible or dangerous to use instrumental urography. It is indicated in patients presenting kidney symptoms who have not reached the age of puberty, and in pregnancy. It is of value in obstructive types of hydronephrosis, particularly those caused by ureteral calculus, and it is the only way of disclosing congenital abnormality in a large percentage of cases. The disadvantages are that the method is expensive and that it gives a less clear definition of the urinary tract than instrumental urography. The author has used skiodan since November, 1930, in his technic of excretion urography. The patient is purged thirty-six hours before urography, and a mild laxative is again given twelve hours before the injection. The diet is restricted during the entire preparation, and the liquid intake during the twelve hours immediately prior to the injection is decreased as much as possible; a cup of tea and a biscuit are all that is given on the morning of urography. The patient is put on the table and 50 cc. of skiodan solution, warmed to body temperature, is injected into the cubital vein by means of a 20 cc. syringe fitted with a two way tap, to one limb of which is attached a needle, the other being connected by rubber tubing to a glass vessel containing the solution. The entire quantity is injected in two or three minutes. A "straight" roentgenogram is invariably taken as a control before injection. The first skiodan roentgenogram is taken ten minutes after injection, the second twenty minutes, and the final exposure thirty-five minutes after the injection. This is the routine method when information is required not only of an anatomic nature or about calculi, displacements and such anomalies, but also of the functions and dynamics of the urinary tract. If anatomic information alone

is required, a single exposure twenty minutes after injection generally suffices. If the three exposures are negative, owing to dysfunction of one or both kidneys, a further exposure is taken one hour after the injection. When the lower third of the ureter is suspected of pathologic changes, or in cases of suspected calculus in the lower part of the ureter, the bladder is emptied before the second and third and any subsequent exposures so that it may not obscure the pelvic portion of the ureter because of the skiodan secreted into it. The technic with iopax and an iopax derivative is the same save that with the former the injection is double the quantity and is extended over fifteen minutes.

Journal of State Medicine, London

41: 63-124 (Feb.) 1933

- Some New Investigations Regarding Old Bacteriologic Problems. M. Neisser.—p. 63.
Preventive Medicine and Education of Public Opinion. E. Graham-Little.—p. 77.
Problem of Cancer in Relation to General Practitioner. M. Donaldson.—p. 96.
Brief Preliminary Report on Lipoid-Globulin Cholesterol Ratios in Cancer. H. Cole.—p. 105.

Lancet, London

1: 399-454 (Feb. 25) 1933

- *Phthisis Pulmonalis Due to Bovine Type of Tubercle Bacillus: Account of Ten New Scottish Cases. A. S. Griffith and W. T. Munro.—p. 399.
Monocytic Leukemia: Two Cases. J. W. Orr.—p. 403.
*Pleural Empyema as Complication of Pyonephrosis. S. Howard.—p. 407.
Clinical Significance of Nerve Endings in Mesentery. D. Sheehan.—p. 409.
The Heart After Diphtheria. S. Alstead.—p. 413.

Phthisis Pulmonalis.—Griffith and Munro obtained cultures of tubercle bacilli from the sputum of 222 patients with pulmonary tuberculosis. The strains obtained from 212 of the patients exhibited the characters of tubercle bacilli of the human type, 209 of the strains belonging to the eugonic human and three to the dysgonic human variety. The latter were tested on the rabbit and proved slightly virulent for this species. The twenty strains from the remaining ten cases were identical in cultural characters with bovine bacilli. All these strains were tested on the rabbit by subcutaneous, and in some instances also by intravenous, inoculation and produced in one or more animals rapidly fatal general tuberculosis indistinguishable from that which follows inoculation of standard bovine tubercle bacilli. One strain was tested on the goat and proved fully virulent for this species also. Of the ten patients suffering from bovine phthisis, three died and necropsies were made on two. In one instance the patient died before the type of infecting bacillus had been determined, and only a partial necropsy was made. The channel of the infection was not determined. The occurrence of enlarged glands before the onset of phthisis indicated that the channel of infection was probably the alimentary canal. In the other necropsy, no tuberculous lesions were found in the neck glands, abdominal organs or lymph nodes. The tuberculous disease was apparently confined to the thoracic cavity. There had been clinical indications of a cerebral tuberculoma in the left frontal lobe, but this could not be confirmed as permission to examine the brain was not granted. The intertracheobronchial glands, particularly the right, showed caseation, but there was no lesion in the lung that could be regarded as primary, the distribution of the pulmonary lesions suggesting rather a root spread type of disease. The anatomic evidence as to the portal of entry of the bacilli was inconclusive, but there were indications that infection with the bovine type of bacilli was through the respiratory tract, the vehicle of infection being dust from the hides of cows or arising in the stable, or droplets sprayed by a cow suffering from tuberculosis of the lungs.

Pleural Empyema in Pyonephrosis.—Howard states that cases of pyonephrosis rarely give rise to severe pulmonary complications, only 5 cases out of a series of 180 being so complicated. Other cases of subphrenic acute infective processes, notably subphrenic abscess, often give rise to severe pulmonary complications, 67.44 per cent being accompanied by effusion of some kind, and 27.9 per cent by purulent effusion. The explanation of this apparent inconsistency is: (1) the long period usually elapsing between the formation of a subphrenic abscess and its detection, as contrasted with the usual early diagnosis

of pyonephrosis; (2) the upper abdominal peritonitis associated with subphrenic abscess and the resulting immobility of the diaphragm, and (3) the tough fibrous capsule of the kidney exerting a limiting effect on the spread of infection. Patients presenting acute pyonephrosis who are left untreated for long periods are likely to develop severe intrathoracic complications.

South African Medical Journal, Cape Town

7: 101-132 (Feb. 25) 1933

- Infectious Disease in General Practice. J. F. Wicht.—p. 103.
Medical Services in the Native Territories. R. C. Germond.—p. 108.
Pellegrini-Stieda's Disease: Case Record, with Commentary and Review of Literature. N. Fram.—p. 110.

Chinese Medical Journal, Shanghai

47: 1-110 (Jan.) 1933

- Gas Cysts of Intestines. P. C. Tung and S. K. Ngai.—p. 1.
*Correlation of Clinical and Electrocardiographic Observations in Human Bundle-Branch Block. C. L. Tung and S. N. Cheer.—p. 15.
Experimental Studies on Ticks. R. Hoeppli and L. C. Feng.—p. 29.
Occupational Diseases in Rug Industry. T. A. Li.—p. 44.
Yang Chin Hua: Chinese Popular Drug for Asthma. T. Q. Chou.—p. 51.
Spinal Anesthesia. H. B. Taylor.—p. 54.
*Choleraic Diarrhea: Notes from a Station Hospital. G. T. Tootell.—p. 58.
Pregnancy in Double Uterus. A. I. H. Wong.—p. 61.
Protein Shock After Administration of Solution of Pituitary. P. W. Wang and J. P. Maxwell.—p. 66.
Simple and Inexpensive Laboratory Apparatus. H. R. O'Brien.—p. 69.

Human Bundle-Branch Block.—Tung and Cheer made a study of all electrocardiograms showing either right or left bundle-branch block from 1921 to April, 1932, and of the corresponding clinical records. They analyze ten cases of right bundle-branch block, in which the broad initial ventricular deflections are downward in lead I and upward in lead III, and six cases of left bundle-branch block, in which the opposite changes are found. The comparative frequency of right bundle-branch block, which is generally considered the rare type, is noted. Of the ten patients showing right bundle-branch block, seven had rheumatic heart disease, in six of which definite mitral stenosis was present. Arteriosclerotic and congenital heart disease occurred in the other three. Of the six patients showing left bundle-branch block, all had hypertensive or arteriosclerotic cardiovascular disease. Three patients with mitral stenosis, whose first electrocardiograms showed right ventricular preponderance, later developed right bundle-branch block. The authors discuss the possible significance of such spontaneous electrocardiographic alteration. The predominant association of right bundle-branch block with mitral stenosis, in which the right ventricle bears the chief brunt, and the exclusive occurrence in their cases of left bundle-branch block in hypertensive or arteriosclerotic cardiovascular disease in which the left ventricle receives the chief damage, are good corroborative evidence in favor of the modern conception of bundle-branch block advanced by Wilson, Oppenheimer, Barker and their associates.

Choleraic Diarrhea.—Tootell gives the symptoms and treatment of the four stages of choleraic diarrhea. The symptoms in the primary stage are elevation of temperature, headache, diarrhea, nausea, with possibly a history of having eaten raw vegetables or the drinking of unboiled water. The treatment consists of the usual diarrheal measures: rest; liquid diet. In evacuation, at least three of the following symptoms are present: purging, vomiting, abdominal pain, pain in the lower extremities, weak pulse, sunken eyes and shrunken skin. The general treatment in this stage of the disease is saline solution administered intravenously if the pulse is weak, and subcutaneously if its volume is good, 4 Gm. of kaolin and 0.3 Gm. of sodium bicarbonate every three hours by mouth, rest, and nothing but liquids until the vomiting and purging cease. During the stage of collapse the symptoms are those of evacuation except that the pulse is imperceptible, the skin is cold and clammy and the temperature is subnormal. In this stage the treatment is the intravenous use of saline solution until the pulse drops to below 90 or the patient has received 1 pound of saline solution for every 15 pounds of body weight. In the male this averages about 4,000 cc. and in the female about 2,500 cc. Kaolin, 4 Gm., and sodium bicarbonate, 0.3 Gm., is given by mouth. Compound tincture of camphor may be given for the pain, but some authorities consider it contraindicated. A liquid diet should be maintained. In the reactive period weakness, dizziness, anorexia and a desire to remain quiet and rest are the pre-

dominating symptoms. General treatment is usually dietetic, beginning with liquids and working gradually into a soft and finally a general diet. Kaolin should be reduced in amount or eliminated.

Japanese Journal of Experimental Medicine, Tokyo

11:1-90 (Feb. 20) 1933

- *Serodiagnosis of Syphilis of Mothers Before and After Childbirth and of Their New-Born Children. J. Nakayama.—p. 1.
- Amount of Lactic Acid in Urine of Long Distance Race Champions. W. Nakagome, K. Sato, M. Usuki and M. Kimura.—p. 23.
- Studies on Mucus-Forming Bacteria: II. Investigations on Mucous Mutant Belonging to *Micrococcus Catarrhalis*, Particularly on Influence of Bacteriophages and on Reversion of Mucous Bacteria into Normal Type. S. Yasuda.—p. 33.
- *Is Flocculation (Ramon) a Specific Reaction Between Diphtheria Toxin and Antitoxin? S. Terao.—p. 43.
- Influence on Kidney of Injection of Kidney Cell Emulsion. J. Kimura.—p. 57.
- Sterilizing Action of Mineral Acids on Putrefactive Bacteria, *Bacillus Typhosus* and *Vibrio Cholerae*. S. Tetsumoto.—p. 61.
- Sterilizing Action of Saturated Monobasic Fatty Acids on Putrefactive Bacteria, *Bacillus Typhosus* and *Vibrio Cholerae*. S. Tetsumoto.—p. 73.

Serodiagnosis of Syphilis of Mothers.—Nakayama made a serodiagnosis of the blood of 303 pregnant women. He found that the blood of the mother before and after childbirth and the blood of the child have little diagnostic value for syphilis. One should suspect syphilis if these bloods are strongly positive in the Wassermann, Murata and Meinicke (turbidity) reactions. The difference between the specific reaction of syphilis and the nonspecific reaction during the period of confinement and childbirth cannot be found by the complement fixation reaction using the freezing point method. The parturient function causes a remarkable change in the reactive substance as determined by Murata and Tamiya's precipitation curve method and proved in the blood of the mother but not in that of the new-born infant. The antigox hemolysin in the human blood, which Gewin stated appears six months after birth, was not found in the blood of the new-born, regardless of the presence or absence of the syphilitic reactive substance. In spite of the variation in the reactive substance found before and after childbirth by Murata and Tamiya's precipitation curves, no change in the hemolytic value due to the parturient function was found in this hemolysin. It was proved that the reactive substance appearing in the precipitation curves before and after childbirth underwent a remarkable change in the blood showing a negative Wassermann, Murata and Meinicke (turbidity) reaction. In the author's investigation, 7.26 per cent of the women were found to be infected with syphilis.

Flocculation (Ramon).—In order to determine whether flocculation is a specific reaction between diphtheria toxin and antitoxin, Terao tested the reaction between Martin's bouillon, in which no diphtheria bacilli were planted, and normal horse serum or diphtheria serum, and also the reaction between diphtheria toxin and normal horse serum, all of which proved negative. But a remarkable flocculation was found between the diphtheria toxin and diphtheria antitoxin, as reported by Ramon. Diphtheria toxin, when subjected to the influence of a diastatic ferment, entirely lost its toxicity. This detoxicated toxin had no immunogenicity against the guinea-pig, but it caused the same initial reaction as the original toxin. When diphtheria toxin was added with glacial acetic acid, the toxin moved into the precipitate. The supernatant fluid, although it was absolutely nontoxic against the guinea-pig and had no immunogenicity, often caused the same flocculation as the original toxin. Shiga's dysentery bacillus toxin, tetanus toxin and Dick's toxin, which were obtained by cultivation in Martin's bouillon, caused flocculation with diphtheria antitoxin. The property of the product of the reaction was nearly the same as that of the reaction between the diphtheria toxin and diphtheria antitoxin. Diphtheria toxin caused flocculation with Shiga's antitoxic serum. The author observed that freezing and thawing of the diphtheric serum caused a decrease of its antitoxic value, but entirely the same flocculation as in the case of the original serum; that is, substances in the diphtheric serum participating in flocculation had no relation to the antitoxin. No flocculation was caused between the purified Shiga bacillus toxin and Shiga's antitoxic serum obtained from a goat immunized with the purified Shiga bacillus toxin, but the original toxin caused a remarkable reaction. The author con-

cludes that Ramon's flocculation may probably be a reaction between the metabolic product of diphtheria bacilli and the antibody against it.

Presse Médicale, Paris

41: 289-312 (Feb. 22) 1933

- Reanimation. L. Binet.—p. 289.
- Indication and Technic for Resection of Shoulder in Tuberculosis. A. Richard and J.-N. Courvoisier.—p. 290.
- *New Test for Diagnosis of Pregnancy: Hormonal Hypercholesterolemia. R.-L. Masciottra and R. Martinez de Hoz.—p. 293.
- Gastric Juice in Treatment of Pernicious Anemia. P.-E. Morhardt.—p. 294.

Test for Diagnosis of Pregnancy.—Masciottra and Martinez de Hoz present a preliminary report on a biochemical method based on the facts that prehypophyseal hormone increases cholesterolemia and that the urine of pregnant women contains the prehypophyseal hormone. It was found in a series of experiments that the injection of urine of pregnant women into guinea-pigs of either sex produced, within the first twenty-four hours, an increase of cholesterol in the blood amounting to from 30 to 50 per cent. The reaction was positive at various stages of pregnancy. In a control series of experiments it was found that the urine of nonpregnant women (surgical control) did not produce the increase of cholesterol observed in the other experiments. Slight variations of less than 5 per cent were observed in a few instances, which may have been due to error in colorimetric readings. The method used in these experiments was as follows: Ten cubic centimeters of urine obtained from the fasting patient by catheterization was mixed with 25 cc. of sulphuric ether. After the mixture had been shaken and decanted, 10 cc. was injected into a guinea-pig. After twenty-four hours, blood was withdrawn from the heart of the animal with a syringe containing crystallized potassium oxalate, and its cholesterol content was determined by the method of Grigaut, described by Grigaut and Achard in the *Revue médicale-chirurgicale des maladies du foie*, March-April and July-August, 1928 (obtainable at the Surgeon General's Library, Washington, D. C.). This test of hormone hypercholesterolemia is considered positive by the authors if the blood cholesterol of the guinea-pig is increased 25 per cent. They think the test has several advantages over the Aschheim-Zondek reaction. The test animal is easier to procure, as it may be male or female, sexually mature or immature, and of any age or weight. The withdrawal of blood does not necessitate killing the test animal. The technic is simple and the test can be performed in twenty-four hours.

41: 689-704 (April 29) 1933

- *Gastric Complications Following Left Phrenicectomy. L. Bernard, Mlle. Gauthier-Villars and Thoyer.—p. 689.
- Allergy: Ten Different Meanings for One Term. A. Tzanck and V. Oumansky.—p. 690.
- Phlebocardiac Reflex. J. Louvel.—p. 693.

Gastric Complications Following Left Phrenicectomy.—Bernard and his associates state that a study of the literature shows that gastric complications following left phrenicectomy are rare. Most often they are slight and associated with a simple aerophagia due to distention of the stomach, which has ascended following the ascension of the diaphragm. In exceptional cases, owing undoubtedly to predisposing conditions, the ascent of the stomach produces a torsion, and a grave syndrome of volvulus manifests itself. Such a case was seen by the authors; an old perigastric adhesion resulting from an ulcer had caused a tilting of the stomach because of the ascent of the hemidiaphragm following phrenicectomy. The necropsy showed a stomach folded double, having the cardia and the pylorus very near each other and in juxtaposition to the colon, and producing at the same time a gastrocolic ectopy and a torsion of the stomach as in diaphragmatic eventration. In this way the gastric volvulus gave rise to a syndrome resembling that of pyloric stenosis. It would be wise, before performing a left phrenicectomy, to undertake a detailed interrogation of the patient and a complete exploration of the stomach, including a roentgenologic examination, in order to discover any latent gastric lesion capable of giving rise to these dangerous mechanical deviations of the stomach. In the few cases reported, the results of interventions on volvulus of the stomach resulting from phrenicectomy were unsatisfactory. This may be due to the fact that they were performed on tuberculous patients, who show a particular susceptibility to grave abdominal operations.

41:745-768 (May 10) 1933

- Cancerous Lymphangitis of Chest. A. Costedant.—p. 745.
Detachment of Teguments of Face in Large Operations of Exeresis on Mouth and Oropharynx. R. Bernard.—p. 748.
*Treatment of Fractures of Spinal Column. F. Jimeno-Vidal.—p. 752.
Reactions of Pulmonary Tissue to Penetration of Foreign Body via Blood Stream. E. Leuret and J. Caussimon.—p. 754.
*Indications and Limitations of Arthrodesis of Hip in Treatment of Coxalgia in Child and Adult. A. Delahaye and J.-N. Courvoisier.—p. 757.
*Pulmonary Mycoses Caused by *Penicillium Crustaceum*. P. Aimé, P. Creuze and H. Kresser.—p. 761.
Experimental Cardiac Ventriculography. H. Reboul and M. Racine.—p. 763.
Angiopneumography. E. Conte and A. Costa.—p. 767.

Treatment of Fracture of Spinal Column.—Jimeno-Vidal describes Böhler's method of treatment for fractures of the vertebral column. The reduction is facilitated by local anesthesia given according to the method of Schmek. With the patient in lateral decubitus, a lumbar puncture needle is inserted at a point 6 cm. from the apophysis of the injured vertebra (to the right if the patient lies on the right, to the left if he lies on the left) on a line perpendicular to the vertebral column, and introduced at an angle of 35 degrees toward the fractured vertebra, and 5 cc. of a 1 per cent solution of procaine hydrochloride is injected directly into the hematoma of the fracture focus. If the needle is bloody when withdrawn, it indicates that the hematoma was located and an additional 5 cc. of the procaine solution is injected in the same spot; if it is not bloody, one must try again to locate the hematoma. For the reduction, the patient is placed in prone decubitus so that the groin is at the edge of the examining table. The upper part of the trunk is raised 25 or 35 centimeters and the head and arms are placed on another table, so that the trunk is suspended between the two tables. A cushion is placed under the ankles, and the legs are strapped to the table in two places. In this position a hyperextension of the spine is obtained. After a few minutes the upper part of the spine is raised still more by putting a box under the patient's arms. At the end of fifteen minutes, approximately, the gibbosity has disappeared completely and the vertebral column is in hyperlordosis. Without the position of the patient being changed, a plaster cast is immediately applied. It should extend anteriorly from the manubrium to the pubic symphysis and posteriorly from the first dorsal vertebra to the sacrococcygeal articulation, space being left on the sides to permit free movement of the arms and flexion of the legs to a right angle. The maintenance of the position of reduction depends on the support given to the manubrium, the pubic symphysis and the point of maximum lordosis. The plaster cast must be retained until consolidation is complete and the vertebral column has recovered its capacity of support. This requires a minimum of twelve weeks in benign cases; in more severe cases, sixteen weeks or more is required. To prevent circulatory disturbances, muscular and osseous atrophy and articular rigidity, the patient is permitted to walk from the outset of the immobilization and several times daily performs exercises consisting in extension of the arms and legs in all directions, flexion of the knees, flexion and extension of the trunk while lying prone on a bed with the pubic symphysis on the edge of the bed, and flexion of the legs in dorsal decubitus. An especially important exercise consists in carrying a sandbag on the head for fifteen or twenty minutes, the weight of which is gradually increased from 5 to 40 Kg. When the plaster cast is removed, the elasticity and supporting power of the vertebral column are as good as they were prior to the injury.

Arthrodesis of Hip in Treatment of Coxalgia.—Delahaye and Courvoisier think that every formerly coxalgic hip which is unstable and painful in walking benefits by arthrodesis. Extra-articular arthrodesis is the simplest method but is advantageously replaced by mixed arthrodesis if large freshening of wound surfaces is required for a good consolidation and if accessible residual lesions persist in the interior of the articulation. The curettage and emptying of these lesions is indispensable to a rational intervention. A residual lesion must be sharply differentiated from chronic coxalgia; in the latter, opening of the joint constitutes a serious error. Arthrodesis by freshening of the wound is used only in certain extracotyloid pseudarthroses with total disappearance of the head and neck of the femur and marked ascent of the femoral stump. An ordinary coxalgia in evolution, in an adult with good general resistance and without other serious active focus, is also benefited by arthrodesis pro-

vided the hip is kept quiet long enough for the local symptoms to be reduced to a minimum. In rare coxalgias that terminate favorably, usually those secondary to a psoas abscess originating in Pott's disease, arthrodesis may be unnecessary. The intervention is contraindicated during the slightest febrile attacks and in the presence of an active abscess or fistula. The para-articular form of arthrodesis is preferred in coxalgia in evolution. The intervention shortens the period of evolution and arrests the spread of the lesions; besides a successful graft, in special cases, an intra-articular osseous ankylosis may take place. Arthrodesis in coxalgia in evolution in children is still in the stage of research. Lasting coxalgias, with slow, progressive destruction and without abscesses or fistulas, often benefit by prudent intervention after drying of the hip. Juxta-articular arthrodesis is often the best method, but in cases in which the freshening of large surfaces by removal of the iliac graft and the danger of hematoma are feared, the para-articular method is preferable. Below the age of 12, the para-articular arthrodesis should be of the external ilio-diaphysary type to avoid intratrochanteric pseudarthrosis. During the first year of evolution, arthrodesis of any type is contraindicated. Arthrodesis during the period of freely evolving abscesses or fistulas in the second year is also contraindicated. In the third year of the evolution of a normal coxalgia, when the abscesses and fistulas have ceased, the osseous lesions are circumscribed and recalcification has started, the indications are clear in three groups of cases. When the roentgenogram in confirmation of the clinical examination shows a loose intra-acetabular or extra-acetabular pseudarthrosis with large destruction, para-articular arthrodesis is indicated. Certain coxalgias evolving with little destruction and tending toward a compact pseudarthrosis terminate in excellent condition after from two to two and one-half years. Usually they tend to progressive flexion-adduction and benefit by extra-articular arthrodesis performed at that moment. Others spontaneously attain an osseous ankylosis in good position, making intervention unnecessary. Indications are less precise in certain benign coxalgias, which, in their third year, exhibit a minimum of destruction and an extensive mobility, and in certain pseudarthroses with regular excavation of the acetabulum and conservation of the head, manifesting the same advantages. If stability, mobility and painlessness seem probable during the last year of evolution of these cases, it is best to let the patient benefit by the articular mobility and to intervene later only if a positive indication arises. In invasive, rapidly evolving coxalgias, the general resistance of the patient is usually poor, toxemia exists and intervention in any form is useless and dangerous. Exceptionally, the coxalgia may be localized and the general resistance be fairly good; in this event an intervention at a distance may be considered, but only with great prudence.

Pulmonary Mycoses Caused by *Penicillium Crustaceum*.

—Aimé and his associates report a case of pulmonary mycosis caused by *Penicillium crustaceum*. When the patient, a woman aged 41, was first seen a diagnosis of chronic pleuropulmonary tuberculosis was made on the basis of the anamnesis, a cough, dyspnea and expectoration and the roentgenographic symptoms of parenchymatous lesions with pleural adhesions and calcification of the right base. No tubercle bacilli were found in the sputum. In the five years that followed, the patient was seen several times and received iodine treatment, which alleviated the cough and dyspnea, but the loss of weight continued and an extension of the pulmonary signs appeared on auscultation. When the patient was seen again ten years after the first examination, the cough and dyspnea were greatly aggravated, the expectoration was abundant, mucopurulent and brick red, and the temperature was elevated. The roentgenogram showed a suspended hydro-aeric image of the right base, presenting the character of a lung abscess. At this time, an examination of the sputum by one of the authors, who was dissatisfied with the diagnosis, showed mycelial filaments on direct examination and the presence of *Penicillium crustaceum* in cultures. Under the influence of an intensified iodine treatment and of administration of an antimycotic vaccine, the clinical symptoms receded and the roentgenographic aspect of the lung returned to normal with the exception of a slight pleural thickening of the right base. Only two other cases of pulmonary infection with *Penicillium crustaceum* are reported in the literature. The case.

is further interesting because of the slow development of the pulmonary lesion, which probably started with a dry pleurisy at the age of 19, and of the phase of ulceration. The authors think that systematic examination of the sputum would reveal more cases of pulmonary mycosis, and particularly of infection with *Penicillium crustaceum*.

Deutsche medizinische Wochenschrift, Leipzig

59: 557-596 (April 14) 1933

Borderline Conditions of Somatic Diseases with Remarks on Asthenia. E. von Romberg.—p. 557.

*Criticism and Problems of Treatment of Anemia. P. Morawitz.—p. 560. Present Status of Suprarenal Problem. J. Bauer.—p. 565.

Sex Hormone and Suprarenals. H. Poll.—p. 567.

*Treatment of Poisoning Caused by Heavy Metals. C. Hegler.—p. 570. Prophylaxis of Poisoning by Heavy Metals. L. Teleky.—p. 573.

Circulatory Action of Commercial Liver Preparations. O. Krayer.—p. 576.

Crisis in Cell Respiration. C. Oppenheimer.—p. 578.

Treatment of Anemia.—Morawitz calls attention to certain shortcomings of the modern therapy of anemia, which, although of great value in improving the blood status of pernicious anemia, does not always prevent the development of funicular myelitis. He suggests that this may be because the spinal symptoms have a causal factor different from that of the blood symptoms. He thinks that larger doses of the preparations may be helpful in preventing the spinal complications and advises that always higher doses be given instead of the minimal dose that is just sufficient to maintain a normal blood status. Blood transfusions are valuable in pernicious anemia primarily for bridging the interval before liver therapy can become active. Other forms of anemia in which blood transfusion is of great help are posthemorrhagic anemia, torpid anemia of the secondary type that does not react to iron or arsenic, anemia pseudoleukaemica infantum, and aplastic forms of anemia. The author recommends extirpation of the spleen for the treatment of hemolytic icterus. In severe cases of essential thrombopenia, he found splenectomy effective, and he suggests that it be tried in some cases of aplastic anemia. Reduced iron or ferrous chloride should be employed in iron therapy because tests indicate that only bivalent iron is absorbed by the organism. Arsenic, formerly widely used in pernicious anemia, is now employed mainly in leukemic disorders, and particularly in those complicated by secondary anemia.

Treatment of Poisoning by Heavy Metals.—Hegler differentiates between the acute and the chronic forms of lead poisoning. In the acute form, the aim is a rapid combination and a harmless storage of the poison in the depots, particularly in the liver and the bone marrow. To attain this end, an alkaline diet and administration of large quantities of resorbable calcium preparations have been recommended. Lead colic is treated with calcium chloride or by slow intravenous injection of from 8 to 10 cc. of a 10 per cent solution of calcium bromide. The spastic constipation may be treated with atropine or with a mixture of atropine and papaverine. The salines, such as carlsbad salt or epsom salt, are generally the best purgatives. Sodium thiosulphate is helpful in the treatment of acute and subacute lead poisoning. In mild cases it is advisable to begin with the intravenous injection of 0.6 Gm. of sodium thiosulphate dissolved in from 10 to 20 cc. of distilled water. This dose may be increased gradually to 1 Gm. In severe cases the initial dose may be 1 Gm. The injections have to be continued for about a week. They exert a favorable influence not only on the lead colic but also on the blood pressure, the hemoglobin content and the general condition. In chronic lead poisoning the aim is elimination of the lead, but care must be taken that the mobilized lead stream does not become strong enough to have an injurious effect. Medication with potassium iodide is helpful and, instead of an alkaline diet, which in acute poisoning aids in carrying the lead into the depots, an acid diet deficient in calcium should be given in chronic lead poisoning. For the treatment of lead paralysis, elimination of the lead is essential, but the galvanic current, massage and injections of strychnine are also advisable. In acute mercury poisoning by mouth the poison should be removed by gastric irrigation and by combination with animal charcoal. Then attention should be given to the kidneys, for their impairment may result in anuria. The author recommends daily intravenous injections of from 20 to 40 cc. of a 33 per cent solution of dextrose, eventually with the addition of sodium

chloride and sodium bicarbonate in order to prevent acidosis and chloride deficiency. Hot packs and pilocarpine are employed for their sudorific effect. The intravenous administration of sodium thiosulphate should be tried. Decapsulation of the kidney has been abandoned in recent times, but roentgen irradiation has been successfully employed. In chronic mercury poisoning the further intake of the poison should be prevented, and elimination should be promoted by sweat cures. The diet should be strengthening, and narcotics are advisable in severe tremor. In the prevention of brass founders' ague, a disease that develops as the result of inhalation of the dust or the vapors of zinc or of zinc oxide, correct ventilation is of primary importance. In the treatment, sweating is helpful and a warm bath should be taken immediately after work. Acute poisoning by arsenic necessitates irrigation of the stomach and medication with arsenic-combining substances. If severe diarrhea exists, intravenous injection of dextrose solution is advisable. Poisoning with arsenic hydride causes hemolysis. For treatment, the author recommends venesection with subsequent blood transfusions, oxygen inhalation and administration of large amounts of fluids. Chronic poisoning with manganese develops generally as a result of the inhalation of pyrolusite, particularly in pyrolusite mills. Exposure extending over a number of years frequently leads to parkinsonism. Once this condition has developed, only symptomatic treatments can be tried. Deposit of manganese dust in the lungs frequently causes pneumonia.

59: 637-676 (April 28) 1933. Partial Index

*Significance of Hysterical Manifestations. A. Bostroem.—p. 637. Border Conditions of Somatic Disturbances with Remarks on Asthenia. E. von Romberg.—p. 640.

Important Forms of Pulmonary Tuberculosis. W. W. Siebert.—p. 643. *Influenza Psychoses During Epidemic of 1932-1933. H. Lewenstein and H. A. Schmitz.—p. 646.

Humoral (Colloidal) Conditions as Constitutional Characteristics. H. Storz and H. Schlunbaum.—p. 649.

Eunuchoidism in Women. O. Maas and W. Nussbaum.—p. 650. Treatment of Addison's Disease by Means of Cortigen and Lemon Juice: Metabolic Changes in Addison's Disease. D. Sülle.—p. 651.

Magnifying Stereoscopy. L. Drüner.—p. 652. Research of Hygiene Organization of League of Nations on Influence of World Crisis on Public Health. C. Prausnitz.—p. 653.

Food Poisoning Caused by Duck's Eggs. W. Fromme.—p. 655.

Hysterical Manifestations.—Bostroem advises against the interchangeable use of the terms "psychogenic" and "hysterical." He points out that the term psychogenic is more inclusive than the term hysterical. Hysteria is characterized by a striving after something. Accordingly, hysterical manifestations should be counteracted by disregarding them as disease indicators. Moreover, their occurrence indicates that the person himself is not convinced of the justification of his demands. If this attitude is taken, the hysterical mechanisms would become not only useless but inexpedient and detrimental for attaining their aim, and thus the symptoms would perhaps disappear in the course of time. However, in estimating hysterical reactions greatest caution is necessary, because the person who produces hysterical symptoms is not necessarily healthy. But once the diagnosis has been established and organic disorders have been excluded, the manifestations should be counteracted in the suggested manner.

Influenza Psychoses.—In the course of the last influenza epidemic, Lewenstein and Schmitz observed thirteen patients with psychic complications, which showed a certain uniformity in that the disturbances of motility predominated. In the majority of patients, the disturbances of motility were of a hyperkinetic and, in a few, of an akinetic character. The hyperkinetic manifestations differed from those of catatonic, manic or paralytic genesis by the predominance of iteration and rhythmization. Lively, expressive and purposeful movements, such as beckoning, threatening, polishing, wiping, gymnastic exercises and marching, were the nucleus of the varied play of movements, which occasionally became distorted by parakinetic alternations and then again became monotonous by iteration. Optic and other sensory impressions caused short-circuit actions and interrupted the motor unrest. Sometimes the motor unrest was accompanied by incoherent talking, and then again they alternated. The facial expression was changeable. In the patients with akinesia, the facial expression, as well as the entire body, was rigid. Induced movements were retained. The reactive movements were slow and jerky, and occasionally movements were begun and not completed. Induced movements were sometimes followed by negativistic muscular spasms. The rare

incoherent oral expressions of these patients generally indicated anxiety. The authors observed no relations between the severity of the somatic manifestations and the psychotic disturbances. The influenza took the usual course, and the psychotic manifestations developed generally between the eighth and tenth days following the onset. In the majority of patients, the fever had subsided on the third or fourth day and high temperatures were never observed during the psychosis, but a catarrh of the respiratory tract and signs of pneumonic foci over the lungs persisted in many instances. Circulatory weakness was manifested by pallor and cyanosis. The slight leukocytosis with considerable deviation to the left and the increased sedimentation speed seemed to indicate pneumonic complications. The cerebrospinal fluid was generally normal, but in some patients there was a slight increase in the pressure, the number of cells and the protein content. Since the majority of the influenza psychoses have not yet terminated, the authors will discuss their outcome at a later date.

59: 677-714 (May 5) 1933

*Cerebral Complications After Vaccination and After Acute Infectious Diseases. H. A. Gins.—p. 677.
Lipoid Granulomatosis (Hand-Schüller-Christian Disease). W. Ceelen.—p. 680.

Intraventricular Conduction Disturbances of Heart. H. Kaliebe.—p. 681.
*Spontaneous Hypoglycemia Following Gastric Operations. F. Beckermann.—p. 683.

Anesthesia with Sodium Salt of a Barbituric Acid Derivative and Tribrom-Ethanol Anesthesia as Complementary Methods. Els.—p. 684.
Is Myoma of Uterus a Benign Disease? K. Abel.—p. 687.
Intravenous Anesthesia with Sodium Salt of a Barbituric Acid Derivative. B. Wolff.—p. 690.

Experiences with Sodium Salt of a Barbituric Acid Derivative as New Short Anesthetic. V. Gundlach.—p. 691.

Research of Hygiene Organization of League of Nations on Influence of World Crisis on Public Health. C. Prausnitz.—p. 692.

Cerebral Complications After Vaccination and After Acute Infectious Disease.—Gins calls attention to the fact that the diagnosis of acute encephalitis is extremely difficult and that therefore erroneous diagnoses cannot be considered rare. Moreover, the diagnosis of encephalitis in connection with smallpox vaccination has been made only in the last ten years. Before this period, although cerebral complications occurred in connection with vaccination, they were not brought into causal relation with it. Spasms, for instance, did occur and some of them ended fatally, but statistics from the years 1910 to 1913 show that fatalities in children as the result of diseases of the nervous system not connected with vaccination are comparatively high and that in comparison to this such fatalities in connection with vaccination are not so high as to justify anxiety. The author stresses that in recent years the cerebral complications of vaccination have been carefully watched for, while the cerebral complications after acute infectious diseases have not been given the same attention. He thinks that a number of the latter may have been listed with the first, and he reports a number of cases with erroneous diagnoses. Moreover, the histologic aspects of postvaccinal and postinfectious encephalitis cannot be differentiated and, although the histologic aspects of epidemic encephalitis differ somewhat from those of postinfectious encephalitis, the author does not think this sufficient reason to reject the etiologic unity of all these forms. On the contrary, he is of the opinion that the postinfectious encephalitis are secondary manifestations of epidemic encephalitis. He bases this opinion on epidemiologic reasons. Following an explanation of the histologic differences, he points out that until 1920 postvaccinal encephalitis was practically unknown, and he considers the spreading of epidemic encephalitis a factor in the greater incidence of acute encephalitis in the course of acute infectious diseases. However, this influence can have been only indirect, because postinfectious encephalitis were not observed at the time of the first occurrence of epidemic encephalitis and they made their appearance only after epidemic encephalitis had already been existent for a number of years. He concludes that epidemic encephalitis took a course similar to that which has been observed in other epidemic diseases: first, a period of typical clinical cases, then a period of atypical, partly abortive forms besides the typical ones, and finally a period of wide dissemination of the virus with only occasional typical cases. Many of the virus carriers have a latent infection and do not develop the clinical symptoms, but a few of those with latent infection are predisposed to the disease, when the normal resistance becomes disturbed. The latter group represents the candidates for the postinfectious or the postvaccinal enceph-

alitis, respectively. As proof for this theory, the author cites the fact that postinfectious and postvaccinal encephalitis are most frequent in countries in which epidemic encephalitis had the highest incidence. He states that encephalitis after vaccination is not as frequent as is believed by some, and he thinks that, since the manifestation involves a predisposition, children subject to spasms should not be vaccinated within a year following the last attack of convulsions.

Spontaneous Hypoglycemia Following Gastric Operations.—Beckermann calls attention to a disturbance in the carbohydrate metabolism of patients who have undergone a gastric operation. These patients develop several times each year, or even each month or week, a syndrome that consists in a sudden feeling of weakness, dizziness, tremor and perspiration, a sensation of heat or cold, apathy, restlessness and sometimes an intense feeling of hunger. These disturbances generally develop after meals with a high carbohydrate content. The symptoms disappear quickly after renewed ingestion of carbohydrate. Sugar tolerance tests on patients who had undergone gastric resection revealed not only unusually low blood sugar values but also the clinical symptoms of hypoglycemia. The author thinks that the causes of this form of hypoglycemia are probably manifold, but a surgically induced anastomosis between stomach and intestine always seems to be a causal factor. Although the individual hypoglycemic attack is best treated by oral administration of sugar, the general diet of these patients should have a restricted carbohydrate content and high fat and protein contents, because a diet with high carbohydrate content causes the attacks.

Klinische Wochenschrift, Berlin

12: 609-648 (April 22) 1933

Arthritis Deformans and Trauma. E. Melchior.—p. 609.
Resection Treatment of Extensive Sarcoma of Femur. R. Nissen.—p. 612.

*Differential Diagnosis of Abdominal Symptoms in Influenza. W. Wachsmuth.—p. 614.

Anterior Lobe of Hypophysis and Thyroid. H. Eitel, H. A. Krebs and A. Loeser.—p. 615.

Gastroduodenal Adenomatosus with Malignant Degeneration of Duodenal Adenoma. H. Markus.—p. 617.

*So-Called Muscular Tears in Athletes. E. Jokl and E. Guttman.—p. 618.

Homolateral Disturbance of Kidney and Spleen. F. Spath.—p. 620.
Surgical Measures for Increasing Sugar Tolerance. G. von Takats.—p. 623.

Action of Diodotyrosine in Exophthalmic Goiter. F. Günther.—p. 625.

Treatment of Postoperative Tetany by Means of Parathyroid Extract and Action of Parathyroid Extract on Calcium, Phosphorus and Protein in the Blood. M. Taubenhaus.—p. 626.

*New Roentgenologic Symptoms for Differentiation of Epiphyseolysis and Luxation of Hip Joint in Nurslings. H. O. Kleine.—p. 629.

Differential Diagnosis of Abdominal Symptoms in Influenza.—In the course of an influenza epidemic, Wachsmuth observed abdominal disturbances, which developed at the onset or in the course of influenza and resembled the symptoms of appendicitis. The blood picture of these patients was the same as that of patients who did not present the abdominal symptoms. Leukocytosis was absent, but there was a marked relative lymphocytosis. Control tests on patients suffering from acute appendicitis always revealed the typical hemogram with leukocytosis and polynucleosis. The abdominal symptoms of influenza can be counteracted by regional anesthesia, at least to the extent that they are the result of neuralgia or of muscular impairment. In acute appendicitis, however, regional anesthesia does not produce this result, since the pain conduction of the visceral peritoneum, the splanchnic nerve, or the rami communicantes is not impaired. During influenza, every intervention involves the danger of complications. For this reason all diagnostic aids should be utilized to avoid an unnecessary operation.

So-Called Muscular Tears in Athletes.—Jokl and Guttman describe severe muscular pains frequently occurring in athletes and commonly referred to as "muscular tears." Among the causal factors, the authors stress the nervous component, although physical exertion cannot be entirely disregarded in their pathogenesis because the pains develop suddenly in the course of an unusual exertion. The designation "muscular tear" indicates an actual interruption of continuity in the muscle and, because of this term, the condition has often been identified with the actual rupture or the detachment of a muscle. The difference between "muscular tear" and true interruptions of continuity is the absence of any visible or palpable symptom

indicating an interruption of continuity. Moreover, actual rupture of a muscle causes such severe symptoms that an operative intervention is required, whereas the so-called muscular tear generally yields to conservative measures. Some observers are inclined to assume only a difference in degree between these conditions, but the author thinks that an essential difference exists. A report of five clinical histories of persons with "muscular tears" reveals the absence of symptoms indicating an interruption of continuity and the symmetrical character of the disturbance. The author thinks that the symmetry of the manifestation, that is, the contralateral development of the symptom, is additional evidence for the predominance of the nervous component in the development of the "muscular tears."

Epiphyseolysis and Luxation of Hip Joint in Nurslings.—Kleine asserts that, beginning with the second half year of life, luxations of the hip joint show in the roentgenogram a hypoplasia of the center of ossification in the head of the femur and of the entire proximal portion of the shaft of the femur. In epiphyseolysis (subcapital fracture) resulting from obstetric injury, however, roentgenoscopy reveals temporarily on the side of the fracture a hyperplasia of the center of ossification in the head of the femur and, in general, an acceleration of the growth process in all epiphyseal nuclei that are near the fracture. The same acceleration of the epiphyseal growth can be observed also in other fractures near the epiphysis occurring during infancy.

Münchener medizinische Wochenschrift, Munich

80: 635-674 (April 28) 1933

- Diagnostic and General Problems of Leukemia. Naegeli.—p. 635.
 Relations of Sympathicosuprarenal System to Procreative Capacity of Female Genitalia. M. Walthard.—p. 638.
 *Benign Noctalbuminuria: Functional or Nephritic Albuminuria? G. Fanconi.—p. 640.
 Endothoracic Goiter. P. Clairmont.—p. 643.
 The Physician as Originator of Disease. A. Krecke.—p. 645.
 Principles of Surgical Prognosis. E. Seifert.—p. 647.
 Cancer Mortality in Zurich. H. R. Schinz.—p. 650.
 Qualitative Hemology and Its Results. I. Arneith.—p. 653.
 Therapy of Granuloma Annulare. L. Görl.—p. 657.
 Treatment of Colicystitis. Zweifel.—p. 657.
 Bandage for Spread Foot. H. Helfrich.—p. 658.
 Criticism of Characterology of Freud and Adler. O. Kant.—p. 659.

Noctalbuminuria.—Fanconi relates the clinical history of a boy who, between the ages of 10 and 17, had frequent attacks of albuminuria (up to 10 per cent), cylindruria and increased blood pressure. The author based the diagnosis, functional albuminuria, on the following factors: (1) the complete absence of general disturbances, particularly the absence of edemas, headaches and changes in the fundus oculi; (2) the absence of blood elements in the urine; (3) the great changes in the urine, for while the morning urine (as a rule highly concentrated) contained large amounts of albumin and casts, the specimens taken later, contained no pathologic elements whatever (noctalbuminuria); (4) the character of the eliminated albumin, for an acetic acid body, precipitable by cold and characteristic for orthostatic albuminuria, predominated; this body is only rarely found in nephritic albuminuria; (5) the outcome of the concentration and water tests; (6) the normal blood chemistry (rest nitrogen at upper limit of normality); (7) the greatly retarded sedimentation speed of the erythrocytes, which occasionally occurs in orthostatic albuminuria, whereas true nephritis is characterized by a considerable acceleration of the sedimentation speed; (8) the result of the treatment; the patient has been healthy for the last four years. The author shows that the reported case cannot be classified with the orthostatic type or with the form resulting from stasis, but that it is an exsiccation albuminuria.

Zeitschrift für urologische Chirurgie, Berlin

37: 1-142 (April 22) 1933

- Nonsurgical Treatment of Hypertrophy of Prostate. A. Cassuto.—p. 1.
 Complications of Cystic Kidney. B. Parin.—p. 9.
 Neoplasms of Kidney and of Renal Pelvis. K. Fischer.—p. 16.
 Treatment of Infectious Diseases of Urinary Passages by Means of Methenamine Camphorate. R. Oppenheimer.—p. 27.
 *Echinococcosis of Kidney. V. Blum.—p. 46.
 *Unusual Perinephric Abscess with Pyelonephritic Contracted Kidney. O. A. Schwarz.—p. 53.
 *Contrast Shadows with Level Surface in Cystic Kidney Following Retrograde Pyelography with Thorium Dioxide Preparation. O. Hennig and J. Lechnir.—p. 60.
 *Treatment of Surgical Tuberculosis of Urogenital Tract by Means of Sauerbruch-Herrmannsdorfer-Gerson Diet. E. Szold.—p. 78.

- Relapses Following Operations for Renal and Ureteral Calculi. J. Hellström.—p. 83.
 *Calcification of Mesenteric and Retroperitoneal Lymph Nodes as Source of Diagnostic Errors in Detecting Calculi of Urinary Passages. R. Lachs.—p. 99.
 Occurrence of Urolithiasis, Particularly of Vesical Concrements in Children. A. Rautenberg.—p. 111.
 Results of Elimination Urography. H. Rubritius.—p. 123.

Echinococcosis of Kidney.—Blum describes the history of a man, aged 48, referred to him on account of a tumor of the left kidney. The first cystoscopic examination revealed the etiology of the tumor, for an iridescent, serous cyst, the size of a date, was seen to issue from the dilated orifice of the left ureter, and pressure on the enlargement of the left kidney resulted in acceleration of the expulsion of the cyst. Anamnesis revealed the intermittent discharge of cysts with the urine, dating back twenty years. The left kidney was extirpated and the patient recovered. The author points out that echinococcosis of the urinary organs is comparatively rare but that echinococcosis of the bladder has shown an increase in recent years. In some districts and countries it has become endemic, owing to the infestation of a large percentage of dogs, sheep, hogs and cattle. In order to prevent further spreading of the condition, the population should be warned to be careful about contact with dogs, and particularly about consuming uncooked foods.

Perinephric Abscess with Pyelonephritic Contracted Kidney.—The case history described by Schwarz indicates that the symptomatology of a perinephric abscess is not always as uniform and typical as is generally believed. The diagnosis was extremely difficult, for, whereas the leukocytosis and the acceleration of the sedimentation speed of the erythrocytes indicated an extensive suppurative process, the roentgenogram seemed to suggest the presence of a tumor. Exposure of the right kidney revealed an enormous perinephric abscess. Subsequently, several metastatic abscesses developed, pyuria continued and the right kidney ceased to function entirely. Nephrectomy was now resorted to, but the patient died on the day following this intervention. All metastatic abscesses developed in parts that had been involved in war injuries. The patient could have been saved if the kidney had been extirpated at the first intervention, but the author states that an extension of the operation to the kidney seemed inadvisable in the presence of the enormous abscess cavity. On the other hand, the secondary nephrectomy was the only intervention that gave some hope of saving the patient.

Contrast Shadows with Level Surface in Cystic Kidney.—Hennig and Lechnir demonstrated in the test tube and on the living organism that thorium dioxide contrast medium is flocculated by mixture with urine. In the roentgenologic visualization of cystic kidney this flocculation results in the formation of contrast shadows that have a level surface. The latter are recognizable in roentgen exposure on the standing patient, and they provide a plastic visualization of the cystic kidney. The author considers this demonstration the method of choice in cystic kidney.

Diet in Treatment of Tuberculosis of Urogenital Tract.—Szold found that the Sauerbruch-Herrmannsdorfer-Gerson diet does not cure tuberculosis of the urogenital tract and that it does not improve the renal function, once anatomic changes have developed, but it reduces the number of painful tenesmi and the frequency of micturitions. Moreover, the weight increases and the general condition improves. The author thinks that in inoperable cases of tuberculosis of the urogenital tract the diet is a valuable adjuvant to the other treatments.

Source of Errors in Detecting Calculi.—In the study of eleven case histories of patients with calcification of the abdominal lymph nodes, Lachs observed certain pointers that are helpful in the diagnosis: 1. Calcified retroperitoneal or mesenteric lymph nodes, as the result of their relations to the renal pelvis and more frequently to the ureters, produce changes that impair the function of these organs. 2. The anamnesis of these patients frequently contains statements about inflammatory diseases of other lymph nodes. 3. The pains produced by calcified abdominal lymph nodes adhering to the ureter resemble greatly the pains produced by renal and ureteral calculi: they are usually localized under the costal arch and, as a rule, are unilateral, either continuous or intermittent and of a colic-like character; they may radiate downward and may be accompanied by disturbances

in the evacuation of the bladder. The body temperature is generally increased. 4. The urinary sediment always contains erythrocytes, but an increase in the number of leukocytes is observed only in cases of simultaneous infection of the urinary passages. 5. Cystoscopy reveals no changes in the bladder, except that occasionally the ureteral orifice of the diseased side is reddish and swollen. 6. Usually the ureteral catheter can readily be introduced up into the renal pelvis, except when the ureter is bent or stenosed by a scar. 7. The elimination of indigo carmine is belated and weaker on the diseased side and may be entirely absent in cases with considerable impairment of the kidney. 8. Roentgenoscopy is the main basis for a correct diagnosis of calcified lymph nodes. They appear as dense, roundish shadows with lighter centers and usually in groups, and they have a tendency to change their position. 9. Roentgenoscopy should be done at two levels and while the ureteral catheters are introduced. 10. Adhesion of calcified retroperitoneal lymph nodes to the ureter may cause constriction of the lumen and impede the urinary discharge, leading to hydro-nephrosis or pyonephrosis.

Zentralblatt für Chirurgie, Leipzig

60: 1105-1152 (May 13) 1933

- *Advance in Lumbar Anesthesia. F. Hollenbach.—p. 1106.
Phlegmonous Gastritis Complicating Scarlet Fever. J. Bedrna and Z. Pfikryl.—p. 1114.
Dislocation and Rupture of Joint. E. Metge.—p. 1119.
Running Suture. L. Torraca.—p. 1120.
Prophylaxis of Gas Gangrene. R. Kraft.—p. 1123.
Operative Treatment of Nonresectable Duodenal Ulcer. E. Koch.—p. 1125.
Rapid Diagnosis of Pneumococcus Peritonitis. M. Langer.—p. 1128.

Advance in Lumbar Anesthesia.—Hollenbach states that, since Americans introduced anesthetic mediums lighter than the cerebrospinal fluid, the method of spinal anesthesia has been given far wider application. Results were further improved by the adoption of Kirschner's method of zonal limitation of spinal anesthesia. The patient's body is placed in an oblique axis with the head lowered and the anesthetic dose is administered fractionally with the Kirschner cannula remaining in situ during the entire operation. The spread of anesthesia can thus be definitely controlled during the operation and the involvement of higher centers definitely prevented. In a group of 1,000 operations, most of them of a serious nature, carried out under spinal anesthesia, there was not a single death or an untoward accident. The author concludes that the method of spinal anesthesia is applicable to practically any operation, except in the presence of a disease of the central nervous system, suppuration of or about the vertebrae, and severe trauma or acute hemorrhage, when an immediate operation is imperative.

Zentralblatt für Gynäkologie, Leipzig

57: 913-960 (April 23) 1933

- Chordotomy in Inoperable Carcinoma of Uterus. F. Schück.—p. 913.
Death from Congenital Syphilis in Case of Negative Seroreactions of Mother. H. Nevinsky.—p. 917.
May Preparations of Posterior Lobe of Hypophysis Be Used in Nephropathy and Eclampsia? H. Küstner.—p. 925.
*Alkali in Treatment of Eclampsia and of Pyelitis Gravidarum. J. Hofbauer.—p. 930.
*Rare Form of Eclampsia. F. Rhemann.—p. 935.
Results of Sterilization According to Madlener. C. Gianella.—p. 938.
Should Tubes Be Extirpated in Operations for Uterine Myoma? V. Král.—p. 939.
Interesting Observations in Healed Peritonitis Following Perforation of Uterus. M. Lederer-Lederhändler.—p. 941.
Severe Injury Caused by Coitus. N. Ács.—p. 943.

Alkali in Treatment of Eclampsia.—Hofbauer shows that the changes which can be produced experimentally by means of extract from the posterior lobe of the hypophysis, the symptoms of eclampsia and the presence of posterior pituitary hormones in the blood indicate that eclampsia results from an oversupply of the hormones of the posterior hypophysis, together with an insufficiency of the capillary endothelium and of the hepatic function. He considers the renal symptoms of secondary nature. He calls attention to the antagonism between extracts of the posterior lobe of the hypophysis and alkalis and states that, since an oversupply of the hormones of the posterior hypophysis is a pathogenic factor of eclampsia, alkali therapy seems justified. He shows that, in addition to a limitation of the food intake, alkalis are the principal factor of the so-called Dublin method, which, in some hospitals, has been the standard treat-

ment of eclampsia for a number of years. The essential factors of this method are submammary infusion of 1 liter of a 1 per cent solution of sodium bicarbonate, gastric irrigations with and retention of 100 cc. of the solution at the end of the irrigation, and intestinal irrigation with and retention of from 0.5 to 1 liter of the solution. Although the original idea was to remove hypothetic toxins from the intestinal tract, the author is inclined to believe that the efficacy of these procedures is due to their inactivation of the hypophyseal action. Moreover, the withdrawal of the gastric juice may effect a change in the acid base equilibrium toward alkalinity and a simultaneous reduction in the blood pressure. The author thinks that his clinical experiences with the addition of a 1 per cent solution of sodium bicarbonate to a 20 per cent solution of dextrose for intravenous medication indicate that alkalis effect a change in the reaction milieu which is important in the production and action of the hormones. As soon as the patients waken from unconsciousness and are able to swallow, they are given 2 Gm. of potassium citrate in water every two and one-half hours. For the treatment of preeclampsia, the author likewise recommends alkali therapy, and in pyelitis gravidarum he employs a combination of sodium bicarbonate and sodium citrate. He thinks that sodium citrate has an influence on the peristalsis of the ureter similar to that of caffeine or solution of pituitary. Encouraged by the results of the treatment of pyelitis, the author now gives sodium citrate for prophylactic purposes. After the fifth month of pregnancy, his patients have to take it three times weekly.

Rare Form of Eclampsia.—Rhemann points out that, whereas formerly convulsions were considered the dominating, even the essential, symptom of eclampsia, it is now generally realized that they are only one of many symptoms and that they may even be entirely absent. Many such cases have been reported in the literature. But besides the cases in which the convulsions are absent, there are also some in which the typical convulsions concur with syndromes entirely foreign to the usual aspects of eclampsia. Because diagnostic errors are likely in such cases, the author gives the history of a case observed by him, in which eclampsia manifested itself through a temporary paralysis of the respiratory center and cyanosis, as the result of a nutritional disturbance of the respiratory center. The striated muscles were not involved in the asphyxia. Had the eclampsia presented only this symptom, the diagnosis would have been doubtful. However, the point of attack of the eclamptic poison changed several times. It shifted to the motor centers, and thus the typical eclamptic syndrome became complete. Later it again shifted from the motor centers to the respiratory center.

57: 961-1024 (April 29) 1933

- Diagnosis of Adenomyosis and of Adenomyomas of Uterus. J. Halban.—p. 961.
*Which Women Should Be Castrated by Roentgen Rays? P. Feldweg.—p. 963.
Exploration of Uterus During Third Stage of Labor. H. Gocke.—p. 974.
Intravenous Anesthesia by Means of a Sodium Salt of a Barbituric Acid Derivative. P. Caffier.—p. 978.
*Treatment of Hemorrhages of Ovarian Origin by Means of Hormone of Corpus Luteum. F. Knab.—p. 987.
Guttadiaphot Method in Gynecology. S. Horner.—p. 992.
Campaign Against Cancer. F. Meder.—p. 999.
Simultaneous Occurrence of Myoma, Cancer of the Breast and Cancer of Uterus. S. Szenteh.—p. 1001.

Castration by Roentgen Rays.—Feldweg maintains that roentgen irradiation is a valuable method in the treatment of menopausal metrorrhagia and myomas. The menopause produced by irradiation differs neither qualitatively nor quantitatively from that developing spontaneously. The age at the time of castration has no influence on the manifestations resulting from the abolishment of functions. The course of the menopause induced by roentgen irradiation is just like the spontaneous menopause primarily determined by the constitution. Asthenic and emaciated women tolerate irradiation amenorrhea well, and women with hyperthyroidism tolerate it still better. However, the symptoms of abolished function in the natural and in the roentgenologically induced menopause are more pronounced in sthenic and pyknic women and women with hypothyroidism; in the latter, especially, caution is necessary with regard to ovarian irradiations. Neurasthenic, psychopathic and mentally unbalanced women are entirely unsuited for castration by roentgen rays. A certain understanding of the significance of the treat-

ment on the part of the patient is a prerequisite for the success of the treatment.

Treatment of Genital Hemorrhages of Ovarian Origin.—Knab thinks that, since the hormone of the corpus luteum has been separated from the follicular hormone and since its action on the uterine mucous membrane and on the ovary has been determined, there is justification in employing it to obtain hemostasis in certain uterine hemorrhages. By counteracting the secretion of the posterior hypophysis, the hormone of the corpus luteum is thought to have a relaxing influence on the uterine musculature, to produce a hypertrophy of the mammary glands and of the uterine mucous membrane, the latter in the form of the premenstrual phase, and to suppress maturation and ovulation of the follicles. The author resorted to treatment with corpus luteum hormone in patients with genital hemorrhages that were apparently of ovarian origin. The author thinks that the nature of these disturbances lies in a persistence of the phase of proliferation of the uterine mucosa resulting from a persistence of the follicle and a deficient formation of the corpus luteum. He describes the clinical histories of six women with irregular and prolonged menstrual bleeding in whom treatment with corpus luteum hormone was tried. The women were given injections of two rabbit units of the hormone several days in succession. The treatment proved effective in five of the women. The author obtained favorable results also in hypermenorrhea and in polymenorrhea of young girls, as indicated in two case reports. In cases of habitual or threatened abortion, in which other than incretory factors could be excluded, the hormone was likewise successfully employed. The author admits that the small material studied by him does not permit generalizing conclusions, but he thinks that further experiments along this line are justified.

57: 1089-1152 (May 13) 1933

Observation on Occurrence of Anterior Pituitary Hormone in Case of Fetal Death in Utero with Surviving Placenta. A. Westman.—p. 1089.
Endocrinologic Diagnosis in Gynecology. M. Breitmann.—p. 1095.
Congenital Malunion of Abdominal Wall and Associated Developmental Lesions. P. Caffier.—p. 1103.

*Brenner's Tumor and Endometriosis. E. G. Abraham.—p. 1113.
Rarer Indications for Transperitoneal Cervical Cesarean Section. M. Penkert.—p. 1130.
Modified Uterography. D. Raisz and E. Gajzágy.—p. 1139.
New Rubber Glove for Use in Obstetric Examination. E. Zweifel.—p. 1144.

Brenner's Tumor and Endometriosis.—Abraham had the opportunity of demonstrating for the first time the coexistence of an ovarian tumor described by Brenner and of endometriosis in the same organism, thus giving support to the theories of Tonkes-de Snoo and of von Behring as to the origin of endometriosis. The observation likewise supports Robert Meyer's hypothesis which links so-called Brenner's tumor with endometriosis. The author believes that Brenner's tumor and endometrioid tumors have their origin in a common layer; namely, the celomic epithelium. The development of each presupposes a local tissue predisposition as well as a general predisposition and certain hormonal influences of constitutional order. The impetus to their development is undoubtedly controlled by ovarian hormones. The endometrioid tissue as well as that of Brenner's tumor display a tendency to functional differentiation without, however, developing the ability of inducing changes of a biologic significance in the organism. Both tumors give evidence of an inherent tendency on the part of celomic epithelium to localized, temporary and anatomically variable differentiation. Both tumors considered from a clinical and histologic point of view are essentially benign.

Norsk Magasin for Lægevidenskapen, Oslo

94: 481-592 (May) 1933

*Experimental Investigations on Suture of Esophagus After Resection. R. Ingebrigtsen.—p. 481.
Pharyngo-Esophageal Cancer: Resection, Suture and Primary Healing. R. Ingebrigtsen.—p. 500.
Resection of Cardia. Esophagogastrostomy. R. Ingebrigtsen.—p. 504.
Treatment of Anemias with Iron. O. Romcke.—p. 507.
*Wallenberg's Syndrome: Two Cases. G. Benestad.—p. 523.
Duodenal Diverticula: Two Cases. E. Platou.—p. 528.
*Erythema Nodosum and Later Tuberculosis. H. J. Ustvedt and A. S. Johannessen.—p. 532.

Suture of Esophagus After Resection.—In his experiments on cats, using the finest 000 silk suture material treated

with petrolatum, Ingebrigtsen obtained primary healing of the musculature after resection of 5 cm. of the esophagus, corresponding to 8 cm. in man. He finds little difference between the esophagus in the cat and in man and considers it not impossible to perform circular suture of the human esophagus after resection of 7 or 8 centimeters.

Wallenberg's Syndrome.—Benestad's cases were characterized by acute onset of alternate hemianesthesia to pain and temperature, unilateral trigeminal anesthesia, difficulty in swallowing, hoarseness, lateropulsion, vertigo, Horner's ptosis and hemiataxia. Necropsy in the first case, in a woman aged 40, showed stenosis of the mitral orifice and softening of the cerebellum. The second patient, a man aged 64, still under treatment, is being fed through a gastric fistula.

Erythema Nodosum and Later Tuberculosis.—Ustvedt and Johannessen's study of 314 cases of typical erythema nodosum seems to show a considerably higher morbidity and mortality from tuberculosis in persons who have had erythema nodosum than in the average population. The danger of tuberculosis appears to be somewhat less after erythema nodosum than after pleuritis. The tuberculosis morbidity and mortality follow closely on the erythema nodosum with a marked maximum morbidity in the first year after erythema nodosum and practically no morbidity after five years, and after the first five years no deaths from tuberculosis. The explosion-like morbidity rapidly following erythema nodosum is regarded as supporting the view that the disorder is a phenomenon of hypersensitivity rather than one of lowered resistance.

Svenska Läkaresällskapet's Handlingar, Stockholm

59: 1-80 (No. 1) 1933

*Experimental Investigations on Protective Power of Animal Organism Against *Bacillus Histolyticus*. S. Insulander.—p. 5.

Protective Power of Animal Organism Against *Bacillus Histolyticus*.—Insulander carried out his experiments on various animals, using two strains of *Bacillus histolyticus*. He found that normal serum and the plasma, contain active bactericidal substances against *B. histolyticus*, made up of an activable and an activating substance. After immunization with *B. histolyticus* or its toxin, no increase in the bactericidal power of the immune serum over normal serum is demonstrable, although all other antibodies appear. In these respects *B. histolyticus* resembles a bacterium sensitive to betalysin. Immune serums are, in vivo, no certain protection against a fatal dose of the bacteria. Attempts to demonstrate, in vitro, bactericidal substances in extract of leukocytes, thrombocytes, lymphocytes and histiocytes establish such substances only in the leukocyte extract. Attempts to demonstrate a protective action in vivo in these cells showed that the leukocytes protect against from fifteen to twenty fatal doses of washed bacteria and, on the addition of 0.25 cc. of immune serum, against at least forty fatal doses; the other cell types had no protective action. No protective action of these cells against toxin of *B. histolyticus* was demonstrable.

Ugeskrift for Læger, Copenhagen

95: 483-512 (April 27) 1933

Methods of Examination in Pulmonary Tuberculosis. O. Lassen and K. Isager.—p. 483.
Continued Studies on Cancer Mortality. M. Hindhede.—p. 489.
Addison's Disease with Roentgenologically Demonstrable Bilateral Suprarenal Calcification. A. Brems.—p. 493.
*Comparative Investigations on Liver Function in Normal Pregnant Women. K. Germer.—p. 495.

Liver Function in Normal Pregnant Women.—Germer tabulates the results of liver function tests made in fifty normal women during pregnancy. The blood content of quinine-resistant lipases began to increase steadily in the sixth or seventh month, all cases showing a positive lipase reaction about four weeks before delivery, with steady reduction in the last four weeks and certain positive reaction in barely half the cases on delivery and normal lipase content in the blood in all cases at the end of the puerperium. The urobilinogen content in the serum, contrary to the icterus index, presented fairly regular variations agreeing with the changes in lipase content. The result of Hay's test and of the urobilinogen test in the urine agreed closely and were also in agreement with the lipase test.

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THE HYPOPHYSECTOMY TYPE OF OBESITY TREATED WITHOUT GLANDULAR MEDICATION

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An unusual method of treating obesity was described in 1929 by Dr. Evans and Dr. Strang of Pittsburgh.¹ Their further reports² stimulated my interest.

From December, 1931, to March, 1933, fifty overweight patients came under my supervision in private practice and were given a modification of the high protein diet. These patients were chosen because they presented the typical distribution of fat pads, commonly ascribed to hypophysectomy—girdle weight, pads on the upper arms, fat folds across the middle of the back, over the iliac crests, in the supratrochanteric regions and above the knee on the inner side of the thigh. The fat on the abdomen varied from the single or double roll of fat to the overhanging apron. There were ten patients with the very thick lower leg, of the "piano" leg type.

All but six children had dieted previously but had regained their weight in the same areas. Sixteen had been given thyroid and pituitary with no permanent improvement in the obesity. Of the fifty, thirty-six showed mild signs of possible hypothyroidism. The basal metabolic tests of these thirty-six patients were as follows: Eight were below —15 (the lowest —31); twenty-two were between 0 and —4; six were from +1 to +14. These results were calculated on the actual weight of the patient at the time of the test. Seven of the thirty-six patients had been previously given thyroid by other physicians and had taken from one-half grain to 2 grains (0.03 to 0.13 Gm.) daily for years. Their basal metabolic tests at the onset of dieting were 1, 1, —9, —10, —10, —12 and —16. On their thyroid dosage they had not lost in weight; therefore, it was thought a fairer test to allow them to continue with this during the dieting period. With the exception of these seven patients, no glandular therapy was used.

The treatment was preceded by a careful medical examination, urine analysis, blood count and, when indicated, blood sugar or other necessary blood chemistry. The ideal weight was arrived at in two ways: first by finding the weight at which the patient had been

most comfortable and, by comparing this with the various weight tables for height, finally arriving at what would seem to be a wise and safe weight figure; this was called the estimated weight. Since October, 1932, the "Willoughby" method³ of computing the optimal weight has been used to check this estimated weight. The two have not varied more than 5 pounds (2.3 Kg.) and often are within a pound or two.

According to the suggested high protein diet of Evans and Strang,^{2b} 1 Gm. of protein was allowed for each kilogram of the estimated weight. The diet was built around this. It allowed three protein portions daily, two 5 per cent vegetable portions, four 10 per cent fruit portions, with skimmed milk used for the calcium content, and extra vitamin A, D and B added. The diet was thus high vitamin, high protein, high mineral salts. No sugar, butter or bread was used.

Figure 1 shows a typical patient before commencing the diet and after a loss of 74 pounds (33.6 Kg.), which she achieved in eight months. Her diet was based on an estimated weight of 155 pounds (70.3 Kg.). The detail of her diet was as follows:

Breakfast.—One portion of fruit; one egg and the white of a second egg (optional: clear coffee or tea, bread substitute and sugar substitute).

Luncheon.—Three ounces of lean meat, fish or fowl; or a small helping of meat, fish or fowl or pot cheese and 1 glass of buttermilk or skimmed milk; or a large helping of pot cheese; one cup (one-half pint) of 5 per cent vegetables; one portion of fruit (optional: lettuce with special dressing and bread substitute).

Mid-afternoon (optional).—One cup of clear (strained) vegetable soup, or one teaspoonful of vegex in one cup of hot water; or tea or coffee with substitute sugar and two substitute cakes.

Dinner.—Three ounces of lean meat, fish or fowl; one cup of 5 per cent vegetables; one portion of fruit (optional: tomato juice or clear soup and bread substitute).

9:30, P. M.—One half cup of orange juice; one to two tablespoonfuls of Bemax or Embo; or one yeast cake or other vitamin B concentrate.

Also: Haliver oil (plain), one capsule three times a day, and one and a half glasses of well skimmed milk at any time during the day (for this patient). (At least one glass of skimmed milk was allowed each patient.)

The portions of fruit were one small orange, one half cup orange juice, one half of a large apple, one medium sized apple or one baked apple, two medium peaches, one small pear, one half of a grapefruit, three quarters of a cup of diced fresh pineapple, one cup of strawberries, one cup of blackberries, two thirds of a cup of black raspberries, seven eighths of a cup of red raspberries, or one half of a cantaloupe 4 inches in diameter.

The bread substitutes were Heudebert bread sticks or breakfast biscuits, Charasse breads, and cellulbran and cellubiscuits.

3. Shelton, E. K.: Optimal Weight Estimation, *Endocrinology* 16: 492-505 (Sept.-Oct.) 1932.

Read before the meeting of the Women's Medical Society of New York State, April 4, 1933.

1. Evans, F. A., and Strang, J. M.: A Departure from the Usual Methods of Treating Obesity, *Am. J. M. Sc.* 177: 339 (March) 1929.

2. (a) Strang, J. M.; McCluggage, H. B., and Evans, F. A.: Further Studies in the Dietary Correction of Obesity, *Am. J. M. Sc.* 179: 687 (May) 1930. (b) Evans, F. A., and Strang, J. M.: The Treatment of Obesity with Low Calorie Diets, *J. A. M. A.* 97: 1063-1068 (Oct. 10) 1931.

The sugar substitutes were Sucre de Sante, Lister Sugar (in a shaker), Lister Sugar Free Sweets and Heyden's Crystallose.

The cake substitute was Charasse Petit Beurre Lucullus.

The salad dressing was Dianaise or home made French or mayonnaise dressing containing mineral oil.

The fifty patients were divided into three groups according to their initial weight.



Fig. 1.—A, July 6, 1932, the patient weighed 228 pounds (103.4 Kg.). B, Feb. 8, 1933, she weighed 163½ pounds (74.2 Kg.); on March 22, she had lost to 154½ pounds (70.1 Kg.). This patient demonstrated to the audience various exercises supervised by Miss Dorothy Nye, which have helped increase the tone of her muscles. Ten of the fifty patients exercised under supervision during the reduction period. It is not thought that, beyond a certain point, the exercises materially helped in the weight loss, but the patients felt in general that it improved muscle tone and kept them in good condition.

Group 1. Eighteen were below 160 pounds (72.6 Kg.); age range from 10 years to 52 years; weight range from 95 pounds to 157 pounds (43.1 to 71.2 Kg.). They dieted an average of nine weeks, lost an average of 11.6 pounds (5.2 Kg.); that is, at the rate of 1.27 pounds (575 Gm.) weekly. Each one reduced to her estimated weight.

Group 2. Nineteen were between 160 and 190 pounds (72.6 to 86.2 Kg.); age range from 21 to 56 years; weight range from 160 to 185 pounds (72.6 to 83.9 Kg.). The average showed a loss of 16.8 pounds (7.5 Kg.) in eleven weeks, a rate of 1.5 pounds (680 Gm.) a week.

Group 3. Thirteen patients were above 190 pounds (86.2 Kg.); age range from 17 to 67 years; weight range from 193 to 268 pounds (87.5 to 121.5 Kg.). The total weight of these thirteen patients was 2,800 pounds. The average patient of this group was 36 years old. She weighed 215 pounds (97.5 Kg.) at onset, dieted sixteen weeks, and then weighed 185 pounds (83.9 Kg.)—an average loss of 1.9 pounds (862 Gm.) a week.

The weight chart (fig. 2) shows in dotted line these three groups and their weight loss curve; also the actual weight curve of four individual patients. When a weight line shows a stationary or upward curve, there

was a lapse from the diet. These patients were all girls and women who continued their work, attending school or were active in household duties. Therefore, we had no way of controlling measured feeding, as under a hospital routine, and unless they had cooperated no measurable results would have been possible.

It was difficult for some of these patients to learn to eat all that was advised. Breakfast, especially, was a larger meal than they were accustomed to. Previously they had often tried to starve for days or to live on one meal a day. This they were not allowed to do. Gradually they learned to take all that was offered, since they found that their weight reduction depended on their eating the entire amount.

Dr. Evans mentions a possibility of a temporary stationary weight—a water-bound condition. This I found in only one patient. Also there was one patient, at the beginning of the work, who showed mild acidosis for twelve hours.

Diets of various sorts have been advocated for many years. The advantage of this type of high protein, high vitamin, high mineral salt diet is that the patients feel satisfied; they lose only in the fat pad areas; they literally live on their own fat and thereby balance their diet. When their optimal weight is reached, they can return gradually to an unrestricted diet and *not* regain. It is this last point that deserves emphasis. Of the fifty patients, seventeen are reducing to still further levels, believing that their looks will be improved. They feel so well on the diet that they wish to continue. Thirty-three have attained their desired estimated weight and have been on an unrestricted diet. Not one has gained more than 5 pounds (2.3 Kg.); fourteen have lost further in weight, and seven have just held their weight.

All the patients were taken off the diet slowly. The first week unrestricted amounts of vegetables were allowed, and beets, carrots and peas were added, cooked without butter. In the second week they were given unlimited fruits, except bananas, and a baked potato was added once a week. In the third week one slice of bread and one butter pat daily were permitted. During the fourth week there was advised a gradual return to whatever was most desired, which was usually one simple dessert daily. As butter was added, haliver oil was decreased and then omitted. By the fifth or sixth week the patient was taking an unrestricted diet. By this I do not mean that the patients returned to their previous eating of carbohydrates and fats, which most of them formerly craved, or of nibbling between meals. They no longer demanded, for example, double sweet desserts. In fact, in many instances, the craving for sweets disappeared. What happened in each case was a dietary reeducation. Apparently they had learned their lesson. They realized that their fat

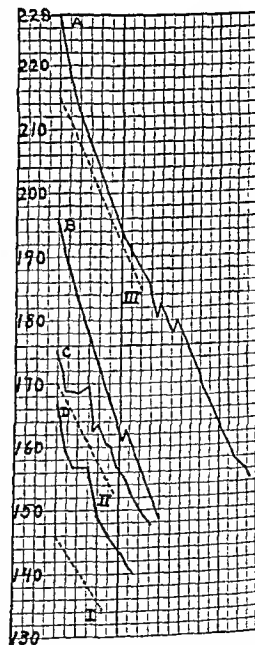


Fig. 2.—Weight chart. 1, average loss of group 1; 11, average loss of group 2; 111, average loss of group 3. A, B, C and D indicate weight curves of individual patients. One square in the vertical position equals 2 pounds (909 Gm.); one square in the horizontal position equals 2 weeks.

pads had come from overeating. They are determined never again to appear in such an unfavorable light, nor to be handicapped, as before, by excessive fat.

Of necessity, some patients had to eat at restaurants and cafeterias. Their weight reduction was slower, because they could not obtain food completely without butter and added sugar.

This prescribed diet satisfied appetite. The patients felt better on it. They were more active. The disappearance of shortness of breath was one of the first results noted. There was no premenstrual stationary weight, as is often noted in other reduction treatments.

Four patient had migraine headaches. The sella was described by the roentgenologist in each case as:

1. Average size. This patient was cured of headache after dieting.
2. Average size, but bridged and closed in. Headaches improved.
3. Large sella—14 mm. Headaches improved. (This patient is still under supervision and the size will be checked at intervals.)
4. Small sella—8 mm. Headaches cured. In five other patients, roentgenograms of the skull were taken because of obvious dyspituitary signs. These showed one medium sized sella, one medium sized sella bridged and closed in, two small sized sellae bridged and closed in, and one large sized sella bridged and closed in.

It is interesting that, of the nine, five showed bridging and were described by the roentgenologist as "closed in," but the number is too small from which to draw conclusions.

One girl, aged 17 years, had a blood sugar of 133. and had recurring boils. On the reducing diet, after eleven weeks, she was in better health than she had been for years, with a normal blood sugar and no further infections.

Menstrual difficulties were not prominent in this group of fifty patients. One had amenorrhea with no change after dieting; two with long skips between periods returned to normal after dieting; four with profuse flow at periods returned to normal after dieting; two with irregular flow, profuse at periods and between periods, returned to normal after dieting; fourteen were in the menopause. One patient who had previously been unable to conceive became pregnant when she reached her optimal weight. Her baby, entirely breast fed, is now 5 months old. The patient did not regain her hypopituitary fat pads during the pregnancy nor through the subsequent lactation period.

Contraindications to the use of this high protein diet were considered to be any acute illness, gastric or duodenal ulcer, acute or chronic arthritis with pain in the joints, and nephritis. It is questionable whether a neurotic patient would hold to the diet, or whether it would be wise to attempt it. Essential hypertension is not a contraindication. Nine of the fifty patients had a definitely high blood pressure, and all were reduced to a fair or average systolic and diastolic pressure.

SUMMARY

This study was made for the purpose of determining whether a typical hypopituitary type of obesity could be successfully treated by a carefully worked out high protein diet. The diet was regarded as a treatment for obesity only and not intended to supplant endocrine therapy when indicated for other symptoms. The high protein, high vitamin diet is not advised for use by the layman but should be strictly supervised by physicians

for those patients who, on careful examination, are found free from any acute or certain chronic diseases.

The fifty patients treated showed a steady reduction to their estimated or optimal weight; the fat pads disappeared; the skin contracted, leaving no flabby folds; they held their weight loss on an unrestricted diet for periods varying from five months to more than one year; their general health improved; their blood counts and urinalyses remained normal; headaches were lessened and menstrual disturbances cleared up. There were no untoward symptoms.

Other patients not included in this series are at present on the same supervised diet and show the expected steady rate of loss in weight. The method warrants the physician's consideration and the results justify his enthusiasm.

22 East Sixty-Ninth Street.

HYPERINSULINISM

ITS SURGICAL TREATMENT

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Hyperinsulinism is the term suggested by Harris¹ in 1924 in explanation of spontaneous hypoglycemia. If there is insufficient insulin, hyperglycemia and diabetes mellitus develop; if insulin is excessive, hypoglycemia develops, with the characteristic symptoms seen after an overdose of insulin. The patient gives a history which in itself points to hypoglycemia; briefly, the history is some variant of the simple fact that when he becomes hungry he has trouble, and when he eats he is quickly relieved. The description of how he feels on these occasions varies from the mere sensation of weakness to attacks of unconsciousness and convulsions. The symptoms all occur when the blood sugar is low and disappear when it is restored to normal, although the complete return to normalcy may be delayed if the reaction has been especially severe. The patient may find that by eating frequently he can prevent the attacks, and as he gives his history he may be nibbling candy or cookies. He may also report the necessity of setting an alarm clock to awaken him at perhaps 2 a. m. that he may eat, and thus prevent an attack in his sleep. Heavy work often produces an attack. Before he consults a physician, his friends may have commented on the fact that he acts peculiarly between meals. If he has had severe symptoms he undoubtedly has been considered drunk. If he has had convulsions he has been called an epileptic.

This type of history is pathognomonic for hypoglycemia. If the patient is seen in an attack, the fact that the condition is identical with that of an insulin reaction substantiates the diagnosis. If he is examined at other times, nothing abnormal will be found, although some patients are obese as the result of the frequent ingestion of food high in carbohydrates.

The laboratory test of blood sugar is needed for confirmation. The blood sugar is low if the test is made

From the Division of Medicine, the Mayo Clinic.
1. Harris, Seale: Hyperinsulinism and Dysinsulinism, J. A. M. A. 83:729-733 (Sept. 6) 1924.

when the symptoms are present; if the blood is taken between the attacks, however, it may be normal. Early in the course of the disease, it may be necessary for the patient to abstain from food and take exercise in order to elicit the symptoms. It may be best, too, to test the blood late in the morning or afternoon. In such case the history is of great importance, for otherwise the change in blood sugar may be overlooked. The intensity of symptoms does not always correspond with the level of the blood sugar. As a rule, symptoms appear when the value for sugar falls below 70 mg. in each 100 cc. of whole blood (method of Folin) and in some cases lack of consciousness occurs when the value is 60 mg. In other cases it may fall to 35 mg. before symptoms appear.

A definite pathologic basis for hypoglycemia due to hyperinsulinism was first demonstrated through the study of a case at the Mayo Clinic in 1926, and reported by Wilder, Allan, Power and Robertson.² In this case, W. J. Mayo found at operation a carcinoma of the pancreas from which Power was able to isolate insulin. Since then, many other cases have been reported; a recent review of these by Wilder³ includes reports of twenty-nine cases in which there was an opportunity to examine the pancreas either at operation or at necropsy. Tumors were found in fifteen of these, two of which were carcinomas with metastasis; hypertrophy of the islands of Langerhans was noted in five, and islands of normal appearance were found in nine. In the literature were twenty-nine further reports of about sixty-five other cases, with symptoms of hypoglycemia, in which the diagnosis rested on clinical observation alone. Since this paper was presented other reports have been published and the number is rapidly growing. The article by Graham and Womack⁴ considers in detail the pathologic observations made in their cases.

When symptoms of hypoglycemia are mild, they can readily be overcome by eating between meals or at any time when the symptoms appear. When there is a strong tendency to hypoglycemia, however, mental confusion, coma, convulsions and other severe symptoms develop, even when care is taken to use sugar at short intervals. There is, therefore, complete disability and constant danger of loss of life. Under such circumstances, radical measures must be undertaken for diagnosis and treatment. Wilder has considered the different conditions which may produce spontaneous hypoglycemia, and also the differential diagnosis.

It is our purpose here to report the results of operation on eight patients at the Mayo Clinic. Three of the cases have been described fully (cases 1, 2 and 3), and four have been described briefly in former publications⁵ (cases 4, 5, 6 and 7). We shall, therefore, summarize the entire group and report on subsequent progress.

ABSTRACTS OF CASES

CASE 1.—A physician, aged 40, had had symptoms of hyperinsulinism for almost two years. The condition became so serious that coma and convulsions occurred unless sugar or

food was given every hour, day and night. Operation by W. J. Mayo, Dec. 4, 1926, revealed carcinoma of the islands of Langerhans with metastatic lesions in the liver. Nothing could be done, and the patient died, Jan. 3, 1927.

CASE 2.—A farmer, aged 52, came to the clinic in August, 1928, because of spontaneous hypoglycemia which had caused symptoms intermittently for more than two years. Loss of consciousness with convulsions was a frequent occurrence. The patient was obliged to take food every two or three hours, day and night, and he was unable to work, since slight exertion precipitated severe symptoms. Operation was performed, September 12, by Judd. The pancreas appeared normal, but a portion of it weighing 14 Gm. was removed. Microscopic examination did not reveal any abnormality. The tendency to hypoglycemia disappeared for two weeks; then the value for the blood sugar became subnormal in the morning, falling to approximately 60 mg. in each 100 cc. However, the patient improved clinically, for if he received three meals each day he was free from symptoms, and he no longer needed to take food between meals or at night.

Reports received from him at intervals indicated that this improvement was maintained for almost a year when hypoglycemic symptoms reappeared, at first rarely, then gradually occurring more frequently until it became necessary to resume taking food between meals and once or twice at night. Later the hypoglycemic tendency increased further and at the last report the man was unable to go without food for more than two and a half hours. He was eating a large amount, using milk and sugar between meals and at night so that his weight had increased from 155 to 220 pounds (70.3 to 99.7 Kg.). He considers that his condition is now somewhat worse than it was at the time of operation.

CASE 3.—A man, aged 47, seen Oct. 2, 1928, had had symptoms of hypoglycemia for four years. Although he ate regularly between meals and at night, loss of consciousness occurred frequently. Operation was performed by Judd, Jan. 2, 1929. The pancreas appeared to be normal, and a portion of the tail, weighing 8 Gm., was removed. Pathologic examination did not disclose abnormalities. The hypoglycemic tendency was not apparent for five days. It then became necessary for the patient to eat frequently and regularly to prevent symptoms, and soon afterward his condition became as serious as before. According to a recent report he is obliged to eat four times during the night besides eating between meals. Since he has taken desiccated thyroid gland it seems possible for him to get along with less food, and further gain in weight has been avoided.

CASE 4.—A farmer, aged 50, came to the clinic, May 13, 1931, because of blurring of vision and vertigo, sometimes leading to loss of consciousness. The symptoms began fourteen months before admission with attacks late in the afternoon before the evening meal, in which he became weak and unsteady. He learned that he could prevent these attacks by eating, but sometimes the symptoms came very suddenly and if he could not eat at once he became unconscious. On one occasion he was unconscious for eighteen hours, and recovery was spontaneous. Diabetes was suspected on one occasion because sugar was found in the urine, probably following the ingestion of a large amount of carbohydrate food.

On examination at the clinic, the value for the fasting blood sugar was found to be as low as 40 mg. A diagnosis of hyperinsulinism was made and an abdominal exploration was performed by Judd, May 25. The pancreas appeared normal except for an area in the tail which was thought to be a small adenoma, but when this part was removed the microscopic examination did not show any abnormality. The tissue resected weighed approximately 5 Gm.

The value for the blood sugar was normal on the day of the operation and on the following day, but on the third day it was 60 mg. It became necessary for the patient to take food regularly to prevent hypoglycemic attacks; mild symptoms appeared a few times. On his dismissal from the hospital his condition was better than before operation, since the symptoms did not occur if food was taken on retiring and immediately on arising. The improvement was maintained for many months, but previous symptoms then returned. He was obliged to take food

2. Wilder, R. M.; Allan, F. N.; Power, M. H., and Robertson, H. E.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia. *J. A. M. A.* 89: 348-355 (July 30) 1927.

3. Wilder, R. M.: Hyperinsulinism. *Internat. Clin.* 2: 1-18 (June) 1933.

4. Graham, E. A., and Womack, N. A.: The Application of Surgery to the Hypoglycemic State Due to Islet Tumors of the Pancreas and to Other Conditions. *Surg., Gynec., & Obst.* 56: 728-742 (April) 1933.

5. Allan, F. N.: Hyperinsulinism. *Arch. Int. Med.* 44: 65-70 (July) 1929. Allan, F. N.; Boeck, W. C., and Judd, E. S.: The Surgical Treatment of Hyperinsulinism. *J. A. M. A.* 94: 1116-1119 (April 12) 1930. Allan, F. N.; Rixford, E. L.; Freeman, L. and Brown, R. W.: Symposium on Hyperinsulinism. *Proc. Staff Meet., Mayo Clinic.* 6: 564-568 (Sept. 23) 1931. Judd, E. S., and Allan, F. N.: Résection du pancréas pour hyperinsulinisme. *Arch. franco-belges de chir.* 33: 281-291 (April) 1932.

between meals and at night and was unable to work because exertion caused dizziness and mental confusion, which occurred frequently and were more difficult to relieve than before. The patient returned to the clinic in April, 1933, and requested further exploration. Judd was again unable to find evidence of a gross lesion. Further resection was technically impossible, but a portion of the pancreas was freed and clamped and allowed to slough away through a drainage tube. Whether improvement will result cannot yet be determined, but in view of experience in similar cases improvement is not expected.

CASE 5.—A man, aged 42, came to the clinic, July 24, 1931, because of spells of stupor which had occurred several times during the previous year. The first indications of trouble were diplopia and blurred vision, always present in the afternoon and disappearing after food had been taken. On other occasions he was in a dazed condition and would do things automatically but without memory of them. On six occasions he lost consciousness completely. His behavior was so peculiar that a diagnosis of hysteria had been made.

The diagnosis of spontaneous hypoglycemia was verified by the test of blood sugar, which, on one occasion, was found to be 20 mg. The result of a general physical examination was negative.

Operation was performed by Judd, August 7, 1931. The pancreas was about half the usual size and showed evidence of chronic inflammation. The capsule of the pancreas was stripped; tissue was not removed. On the afternoon of the operation the blood sugar was 60 mg. and on subsequent tests it continued to be slightly subnormal. The patient was advised to take food between meals and at night in addition to the regular three meals. A recent report indicates that on this regimen he is working daily and without great inconvenience, but he is gaining weight.

CASE 6.—A laborer, aged 45, came to the clinic, Sept. 17, 1931, because of attacks of weakness which had occurred at intervals for four years. The trouble began while he was at work. He became weak and confused, and because he behaved as if he were intoxicated he was discharged from his work. He sometimes had severe attacks in which he became completely unconscious and had convulsions. In one of these he remained in a stupor for sixteen hours and in another for twenty-five hours. He discovered that if he took milk the attacks could be prevented. The day he registered at the clinic he was seen in a restless sleep in which he moved about, and his face and thumbs twitched; he was sweating profusely. Orange juice with sugar was put in his mouth, and gradually he regained consciousness.

The value for the blood sugar was subnormal on many occasions; sometimes it was 40 mg. when the patient seemed normal, but, if it dropped to 30 mg., he became stuporous. Ingestion of food caused a rise in the value for sugar and relief of symptoms. Injection of epinephrine and solution of pituitary caused a slight elevation of blood sugar and retarded slightly the subsequent fall. The general physical examination was essentially negative except for obesity.

Operation was performed by Judd, September 25. A cystic tumor, measuring about 3 cm. in diameter, was found in the body of the pancreas and was excised. The tumor was composed of cells resembling those of the islands of Langerhans with evidence of malignancy. Before the operation the value for the blood sugar was 40 mg.; two hours afterward it was 160 mg., and four hours later it was 190 mg. For the next three days the blood sugar varied between 140 and 160 mg., and from this time on it was never subnormal.

Convalescence from the operation was delayed because of pneumonia and a pancreatic fistula which was present for more than nine months. Recently, the patient reported complete relief from all preoperative symptoms.

CASE 7.—A man, aged 32, who had had spells of weakness and mental confusion at intervals for a year came to the clinic, Aug. 4, 1931. Hypoglycemia had been discovered soon after the onset of the trouble and the patient was advised to take sugar twice in each interval between meals and occasionally during the night. If he failed to take enough sugar, or if he undertook any unusual exertion, hypoglycemic symptoms appeared. Early in the course of the disease he

recognize the prodromal symptoms without difficulty, but later he often failed to notice that anything was wrong until he became helpless and was unable to work.

The value for the blood sugar was usually below 60 mg. when symptoms were present, but on one occasion the blood sugar was 40 mg.; the patient was then apparently normal. There was also the history of gastric distress and roentgen examination disclosed duodenal ulcer and extensive polyposis of the stomach. The general physical examination did not reveal abnormalities.

Operation was performed by Judd in October. Two tumors were found in the pancreas; one about 1.5 cm. in diameter was embedded in the anterior surface of the pancreas at the junction of the body and the tail, and the other on the upper border of the pancreas, 2.5 cm. above the first tumor, was attached to a lymph node about 2 cm. in diameter. On pathologic examination these were found to be tumors of the islands of Langerhans with evidence of malignancy.

The convalescence from the operation was satisfactory and the patient was entirely free from hypoglycemic symptoms. The blood sugar was normal during the first three weeks, but later it was sometimes subnormal, ranging from 50 mg. to 80 mg. in the morning before breakfast. Yet the response to the dextrose tolerance test resembled that of a patient with mild diabetes. The possibility that there might be other tumors buried in the pancreas and that there might be metastatic lesions was considered, and a course of roentgen treatment was given as a safeguard.

The patient reports that he has had good health since the operation. He has been entirely free from hypoglycemic symptoms even when he deliberately went without food.

CASE 8.—A salesman, aged 35, had hypoglycemic symptoms which first became manifest in September, 1926. He was working in a hay field when he became very weak and collapsed. He was helped to his home, where he ate and immediately felt well. He continued to have these attacks between meals, especially if he were engaged in active labor, and always he was relieved by taking food. In April, 1927, he became unconscious and was revived by being forced to drink cocoa. In December, while on a boat to Central America, he was found unconscious in his cabin; the attendants thought him drunk and left him alone. He regained consciousness spontaneously after six hours, ate some apples and felt well. While in Central America he was able to work by eating frequently of bananas. In March, 1928, he was admitted to a fruit company hospital because of convulsions and was told he had epilepsy. Later observation at Stanford Hospital disclosed that the value for the blood sugar was 33 mg., and diagnosis of hyperinsulinism was made. Operation was performed in September, 1928, by Holman. A tumor was not found but a portion of normal pancreas was excised. Subsequently a pancreatic cyst formed which required further surgical intervention; complete healing followed. He was somewhat improved, but by March, 1931, he found it necessary to eat between meals and at 1 a. m. as well. His condition became worse and in October, 1932, he was unconscious for twenty-four hours; he recovered spontaneously.

The patient was admitted to the Mayo Clinic in November, 1932. General physical examination was negative except for slight obesity. Blood sugar determinations made between meals averaged 35 mg. November 25, an operation was performed by Judd, who did not find a definite tumor of the pancreas, but he removed a small nodule. Pathologic examination of the nodule disclosed mild chronic interstitial pancreatitis with marked scarcity of the islands of Langerhans.

The condition since the operation has not markedly changed. Subjectively, the patient is somewhat better, but his blood sugar has continued along its low level except when food is given at frequent intervals.

TECHNIC OF OPERATION

Surgeons have not utilized a standard technic in operating on the pancreas. The prime requisite is that the incision should give adequate exposure. In the

was opened by a long left rectus incision, the usual procedure. The Finneys⁶ advise a T shaped incision; this also should prove satisfactory. The exposure of the pancreas in our cases was made through the gastrohepatic omentum. Certain surgeons make the exposure through the gastrocolic omentum. In resecting the pancreas, the body is grasped with a pair of De Martel intestinal clamps and lifted away from its bed; the surrounding tissues are separated and pushed back, and bleeding is controlled. Holman and Railsback⁷ have suggested that it might be advantageous to remove the spleen with the tail and body of the pancreas, in order to overcome any difficulty in controlling the bleeding. Removal of a tumor has usually been accomplished by dissecting it from surrounding tissue. In the case in which Newton⁸ operated, however, the tail of the pancreas, which contained the tumor, was entirely resected. The cut surface may be closed by suture. In some of our cases clamps were left on the remnant of pancreas in preference, since they might serve as a drain also. A drain of some sort has usually been employed. Newton made the closure without drainage, and the outcome was successful. In some cases, however, a pancreatic fistula has drained for a short time. With one exception, these healed without trouble. In this case, there was drainage for several months before healing was complete.

COMMENT

The results of attempts to treat hyperinsulinism surgically depend on the condition found at operation. If carcinoma of the islands of Langerhans and multiple metastatic nodules are present, nothing can be done, but if a localized tumor of islet tissue is found and removed, the patient will recover completely. When there is no gross change in the pancreas, resection of a part of the gland may give partial or temporary relief, but the prognosis is uncertain. The results thus far have not been encouraging, probably because not enough gland has been removed to influence adequate production of insulin. As Wilder has pointed out: "The situation is analogous to that of the early history of surgery in hyperthyroidism. The results in this new field ought to be as good as those now obtained in hyperthyroidism by thyroidectomy and I predict they will be." The Finneys demonstrated "the feasibility of removal of large portions of the pancreas as a comparatively safe and simple procedure."

Medical treatment has proved unsatisfactory in cases in which there was a strong tendency to hypoglycemia. The palliation of frequent feedings of food high in carbohydrate is efficacious in mild cases, but when the condition is severe even frequent large feedings may fail to prevent symptoms. The gain in weight which results from constant overeating may be a further handicap. Diets high in fat and relatively low in carbohydrate have been employed with varying results. Various drugs and endocrine preparations have been tried in an effort to create resistance to insulin. Desiccated thyroid gland, extract of the posterior lobe of the pituitary gland, and epinephrine have been used particularly because of their antagonistic effect to insulin. Epinephrine may be helpful for emergency use in resuscitation of a patient who has lost conscious-

ness, yet the action is not very strong and is not maintained. Thyroid gland sometimes seems to decrease the amount of food required, but the dosage which can be given does not give adequate relief. Therefore, in serious cases, the aid of the surgeon must be sought. If there is a constant tendency for the value of the blood sugar to fall below 50 mg. and severe symptoms of hypoglycemia develop which keep the patient from working and earning his living, operation is justified. If the condition is severe, there is a strong possibility of the presence of organic disease in the pancreas. The importance of early removal of a malignant or potentially malignant tumor must be considered.

CONCLUSIONS

Hyperinsulinism is a disorder which can be suspected from the history of spontaneous symptoms of hypoglycemia and the demonstration of a low value for blood sugar.

Medical measures frequently fail to give complete or lasting relief, and surgical intervention must then be considered.

Surgical treatment is eminently successful (curative) if a localized islet tumor can be removed from the pancreas. It has failed to give satisfactory results in the absence of tumor, but in such cases more radical resection of the pancreas may be effective.

Surgical treatment is indicated when a patient has hypoglycemia with severe symptoms causing disability. The prospect of cure by operation and the possibility of malignancy are the factors that should influence the decision.

THE NEWER TREATMENT OF STRYCHNINE POISONING

REPORT OF AN UNUSUAL CASE

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This case is reported for the following reasons: (1) the unusual delay in the appearance of the actual convulsions (forty-nine hours after ingestion of the poison); (2) the unusual length of the period during which these convulsions occurred (five and one-half days); (3) the treatment by intravenous injections of sodium amytal, which in our opinion was the life saving measure; (4) the use of tribrom-ethanol anesthesia, which was supplemental to the sodium amytal, enabling us to use less of the latter than otherwise would have been necessary (this is the first case of strychnine poisoning in man in which tribrom-ethanol was employed); (5) a medicolegal angle involving differential diagnosis between its first stages and acute alcoholism.

HISTORY OF CASE

A woman, aged 30, weighing 105 pounds (48 Kg.), Oct. 9, 1932, at 10:30 a. m., one-half hour after eating a light breakfast, accidentally swallowed approximately $1\frac{3}{4}$ grains (0.11 Gm.) of strychnine in the form of sugar coated pills. In about fifteen minutes, she became nervous and restless and experienced stiffness of the neck and limbs. She was taken to the accident ward of the Atlantic City Hospital at noon, where she was given, by hypodermic administration, one-tenth grain (0.006 Gm.) of apomorphine hydrochloride, which caused vomiting, 20 grains (1.3 Gm.) of tannic acid, 30 grains (2 Gm.) of chloral hydrate, and 20 grains of sodium bromide. The stomach tube was not used. She was discharged two and one-half hours after admission. One of us (S. S.) then first took

6. Finney, J. M. T., and Finney, J. M. T., Jr.: Resection of the Pancreas, *Ann. Surg.* 88: 584-592 (Sept.) 1928.

7. Holman, Emile, and Railsback, O. C.: Partial Pancreatectomy in Chronic Spontaneous Hypoglycemia with a Review of the Cases of Hypoglycemia Surgically Treated, *Surg., Gynec. & Obst.* 61: 591-600, (March) 1933.

8. Newton, F. C.: Personal communication to the authors.

charge of her, at 3 p. m., or five hours after she took the strychnine. She felt sick and low in spirits. Emesis was again induced, a hypodermic of one-fourth grain (0.016 Gm.) of morphine sulphate was given, and she was put to bed in her home. Throughout that evening and the following day and night she had severe pain in the back of the neck and in the back, and there was very frequent clonic jerking of the head laterally. She was given from 5 to 10 grains (0.3 to 0.6 Gm.) doses of chloral hydrate and from 10 to 20 grains (0.6 to 1.5 Gm.) of potassium bromide every three or four hours. Danger of convulsions was deemed past after twenty-four hours from the time of ingestion of the poison had elapsed.

At 11 a. m., October 11, forty-nine hours after taking the pills, a convulsion, the first one, started, which lasted thirty minutes. She was sitting up in bed, the head was retracted and jerked violently; the arms jerked spasmodically and violently; the trunk as a whole was in severe spasm and there was an anxious expression in the face and a feeling of oppression in the chest. Attempts to control this convulsion by inhalation of amyl nitrite and ether on cotton sponges were entirely unavailing. Three hours later, another convulsion, more severe than the first, started. With the patient sitting up in bed, there were violent tetanic spasms of every part of the body, with retraction of the head, opisthotonos, risus sardonius, frothing at the mouth, and anxiety; the patient cried in agony, bitterly complaining that she was choking. The amyl nitrite and ether again were of no value in mitigating the attack. One of us (H. S. D.)¹ then suggested the intravenous use of sodium amytal. After forty-five minutes of the seizure, before it was completely over, the contents of a 7½ grain (0.5 Gm.) ampule of sodium amytal was given intravenously. With the injection of the first drop, the patient fell into a deep sleep and was removed to the hospital. She began to wake up at 1 a. m., October 12, ten hours after the injection. At 5 a. m. the temperature was 101; pulse, 112; respiration rate, 32. At 9:15 a. m., 1:45 p. m. and 2:30, the patient had convulsions lasting, respectively, twenty, ten and five minutes. Oxygen, chloral and bromides were given. At 5:30 another convulsion started, for which chloroform inhalation and artificial respiration were unavailing. Seven and one-half grains of sodium amytal was then given intravenously. At 11 o'clock she was restless in spite of bromides and sodium amytal by mouth and was given another 7½ grains of sodium amytal, intravenously. She was unconscious for five hours and then became restless again. Bromides and sodium amytal by mouth were given. She lapsed into unconsciousness again, and at 6 a. m., October 13, the extremities were cold, the pulse was feeble and there was excessive mucus in the bronchi. A little later she was very weak; there was some difficulty in swallowing, and respiration was of the Cheyne-Stokes type. Coramine and atropine were given hypodermically. At 12:30, 3, 5:45 and 6:20 p. m., she had convulsions lasting, respectively, two, ten, five and ten minutes. At 8:05, she had a severe seizure lasting forty minutes, with risus sardonius and opisthotonos, and complained of inability to see. Following this seizure she slept all night.

October 14, at 8:55 a. m., the patient had a severe convulsion with opisthotonos lasting forty-five minutes. At 10 o'clock, while blood was being withdrawn from a vein, another convulsion started. At the end of one hour of this, 7½ grains of sodium amytal was injected intravenously, with sleep immediately ensuing, and lasting four hours. At 6:30 p. m., the patient was conscious of a rapid pulse and jarring of the entire frame, which went into a convulsion involving the entire body. After fifteen minutes of the spasm, 4 grains (0.26 Gm.) of tribrom-ethanol (175 cc.) in 6 ounces of water was given by rectum. Sleep ensued a minute later and lasted six hours. The use of tribrom-ethanol was suggested by Dr. Harry Subin of the surgical staff.

October 15, at 12:45 a. m., the patient had a convulsion of the entire body with risus sardonius. Tribrom-ethanol was given as before at 1 o'clock, followed by restless sleep of seven hours. At 9 o'clock a convulsion of the entire body started. The patient complained of neck pain and fatigue and begged

to be relieved. After seventy-five minutes of the spasm, 7½ grains of sodium amytal was given by vein. Sleep for seven hours followed. At 7 p. m., with the head and limbs twitching, the patient was exhausted and complained of a "dark curtain over the eyes." Tribrom-ethanol, as before, was given at midnight, with nine hours of restless sleep ensuing. The temperature dropped to 96.4 F., rectal. Nearly all of the convulsions were preceded by a premonitory cry and were accompanied by itching of the scalp and skin, and pain in the neck and chest. Sodium amytal by mouth, chloral and bromides were administered after some of the seizures.

October 16, the head twitched for five minutes in the morning and at 4 p. m. there was twitching of the head and violent thrashing about of the limbs. She was given 5 grains (0.3 Gm.) of chloral and she soon quieted down. This was the last spasm. She was free from symptoms until October 18, when she was discharged from the hospital.

The urine and blood chemistry were normal.

ANALYSIS OF CASE

The amount of strychnine taken by the patient was approximately 1¾ grains (0.11 Gm.). This is slightly above the average fatal dose for an adult, which is 1½ grains (0.09 Gm.). The restlessness, stiffness, neck pain, twitches and convulsions themselves were typical. The altogether atypical and unprecedented feature was the delay in the appearance of the convulsions and the length of the period during which they lasted. The first seizure did not occur until forty-nine hours after the ingestion of the poison; the last one, seven days and eleven hours after the ingestion; the period between the first and last convulsion was five days and eleven hours; the total number of convulsions was seventeen. Nothing like it could be found in the literature. The descriptions in the textbooks and in recorded cases measure the time of appearance of convulsions in minutes or at most a few hours, and the entire duration of the toxic state, both in the fatal cases and in those in which recovery takes place, several hours.

The delayed appearance of the convulsions was probably due in part to the food in the stomach at the time of the taking of the poison, to the fact that it was in the form of sugar coated pills, and to the depressants administered, chloral and bromides. That the latter were totally insufficient to prevent the ultimate appearance of the severe and numerous spasms can be seen from the history of the case.

We are unable to offer any explanation for the unusual length of the period throughout which the convulsions lasted (five and one-half days).

No similar case is recorded. Ornsteen² says that he recently observed at the Philadelphia General Hospital two or three cases of strychnine poisoning that lasted three or four days, with fatal outcome. The data on these cases are, however, as yet unavailable.

With regard to treatment, the patient received five injections of sodium amytal by vein for a total of 35 grains (2.3 Gm.). Four injections of tribrom-ethanol, and, by mouth, 5 capsules of sodium amytal, 2 drachms (7.5 cc.) of chloral hydrate and 1 ounce (30 Gm.) of bromide salts; one-half grain (0.03 Gm.) of morphine and one-tenth grain (0.006 Gm.) of apomorphine hydrochloride. Oxygen, chloroform, ether, amyl nitrite and artificial respiration were tried during the convulsions.

EFFECTS OF THE SODIUM AMYTAL

Narcosis was produced immediately and lasted from six to ten hours. When given while the convulsion was still in progress, the latter ceased at once. The effect

1. To Dr. Davidson, for first suggesting to me (S. S.) the use of sodium amytal intravenously in this case and administering it, to which the patient owes her recovery, entire credit must be given.

2. Ornsteen, A. M.: Personal communication to the authors.

was immediate and complete, and the sleep was deep and free from restlessness.

In our opinion, the sodium amytal injections by vein saved the patient's life. On the other hand, the untoward effects of this barbiturate were also manifest. Thus, the excessive mucus in the bronchi, dysphagia, feeble pulse, cold extremities, and the general appearance of collapse, present on the morning of October 13, were no doubt due to the two injections given the previous evening. Lilly's pamphlet on sodium amytal³ warns of the dangers of its use by the intravenous route and advises such administration only in those cases in which immediate relief is urgent.

TRIBROM-ETHANOL

Four rectal injections of tribrom-ethanol, 4 grains (0.26 Gm.) each, were given. This case was the first in man to be treated with this anesthetic. Sleep after each injection followed in a few minutes and lasted from five to nine hours. The sleep was more restless than after the amytal injections, but there seemed to be no untoward effects. However, convulsions followed the awakenings from tribrom-ethanol much sooner than after those from the sodium amytal.

Sodium amytal by mouth had apparently no effect whatever. The benefit from chloral hydrate and potassium bromide, long used in strychnine poisoning, cannot be exactly evaluated in this case. As stated before, they may have had something to do with the delay in the onset of the convulsions. But once the convulsions started, these drugs had but little appreciable influence either in stopping them or in preventing fresh ones from occurring.

Amyl nitrite, chloroform and ether proved of no value whatever in stopping the convulsions. Artificial respiration during the attacks was entirely futile and meddlesome.

Morphine was also without effect. As it stimulates the motor and reflex functions and depresses the respiratory center, it would tend "to augment rather than allay convulsions."⁴ Used in sufficient quantity to control the convulsions, it is likely to prove fatal.

THE NEWER TREATMENT OF STRYCHNINE POISONING

The chapter on the treatment of strychnine poisoning must be entirely rewritten. The directions for treatment in the latest textbooks are virtually the same as those of a generation back. These are, essentially, the evacuation of the stomach, the giving of a chemical antidote, the administration of chloral and bromides, and, for the convulsions, chloroform, ether, amyl nitrite and artificial respiration. With this treatment the mortality from strychnine poisoning is still above 35 per cent. The profession is no more advanced in the treatment of this condition than the textbooks. It would seem, moreover, that the medical schools are woefully derelict in the teaching of toxicology. Morphine is still used, despite its dangerously synergistic action to strychnine. The intern at the receiving ward of the hospital did not wash the stomach and he discharged the patient after a stay of less than two and one-half hours, as she "showed no symptoms," whereas a thorough knowledge of the potentialities should have prompted him to admit her for close observation. Another intern advised enthusiastically the use of morphine.

The difficulty with chloroform and ether is that they may cause respiratory failure when given in amounts sufficient to control the convulsions. Chloral and the bromides are useful only to a very limited extent.

The barbiturates, especially sodium amytal, intravenously, have opened up a new and hopeful chapter in the treatment of strychnine poisoning. The great usefulness of these drugs consists in the fact that they are anticonvulsant and detoxifying motor depressants, that they can be given intravenously in just sufficient amount to control the convulsions, and that strychnine itself is an antidote to them.

The use of the barbiturates in strychnine poisoning and in other convulsive states was developed by many investigators.⁵

The modern treatment of strychnine poisoning, therefore, consists chiefly and preeminently in the intravenous administration of sodium amytal, either during the premonitory stage or when the convulsion has begun. The dose is $7\frac{1}{2}$ grains (0.5 Gm.). Smaller or larger doses to be used as required and repeated with each convulsion. In severe cases, when repeated injections of the barbiturates are required, they may be supplemented with tribrom-ethanol anesthesia. Giving a chemical antidote, such as tannic acid, and lavage of the stomach are also important. Chloral and bromides may also be given.

To date, eleven cases have been reported of human strychnine poisoning treated successfully with sodium amytal. Our case is the twelfth. Kempf, McCallum and Zervas⁶ reported ten cases and one case treated with pentobarbital. Wheelock⁷ reported one case.

DIFFERENTIAL DIAGNOSIS BETWEEN STRYCHNINE POISONING AND ACUTE ALCOHOLISM

The necessity for a differential diagnosis between strychnine poisoning and acute alcoholism would probably not occur to any one. Yet, a situation developed in this case involving such differentiation. The patient was sitting in an automobile when she swallowed the pills. Soon experiencing the agitation and restlessness which characterize the first effects of strychnine, she drove off. After several minutes, stiffness of the neck and limbs having set in, she crashed into a tree. The police, observing her confused condition, considered her drunk and took her to their police surgeon, to whom they imparted their opinion. The latter, noticing her unsteady gait, without further examination declared her drunk and she was held on a charge of drunken driving. At the hearing before a police judge, after the patient's recovery, the police surgeon, though he was acquainted with the fact of her having swallowed the strychnine before she was brought to him and of her stormy course at the hospital, stuck to his previous opinion, and she was convicted of the charge. Later, on appeal, a higher court discredited this testimony, reversed the police judge's verdict and exonerated her entirely. That there is some similarity in the symptoms of acute alcoholism and the first stages of strychnine poisoning can be seen from the following:

Alcohol.—Alcohol causes a general feeling of well being. Soon there is weakness of muscular movements, particularly noticeable in staggering gait.⁸

5. Footnote 3. The Treatment of Strychnine Poisoning, editorial. J. A. M. A. 98:1992 (June 4) 1932.

6. Kempf, G. F.; McCallum, J. T. C., and Zervas, L. G.: A Successful Treatment for Strychnine Poisoning, J. A. M. A. 100:549 (Feb. 25) 1933.

7. Wheelock, M. C.: Strychnine Poisoning, J. A. M. A. 99:1862 (Nov. 26) 1932.

8. Rusby, H. H.; Bliss, R. A., and Ballard, C. W.: The Properties and Uses of Drugs, Philadelphia, Blakiston's Son & Co., pp. 409 and 391.

3. Ampules, Sodium Amytal, pamphlet by Eli Lilly & Co.
4. Haggard, H. W., and Greenberg, L. A.: Antidotes for Strychnine Poisoning, J. A. M. A. 98:1133 (April 2) 1932.

Signs of Strychnine Poisoning.—Restlessness and increasing agitation are soon followed by muscular stiffness, accompanied by toddling and unsteadiness in walking.⁹

SUMMARY

The case of strychnine poisoning reported was of unusual duration and intensity. It was treated by intravenous injections of sodium amytal, with supplemental use of tribrom-ethanol anesthesia.

CONCLUSIONS

1. Sodium amytal intravenously is life saving in cases of strychnine poisoning and should be resorted to from the first. It is the ideal drug from a pharmacologic, physiologic and clinical standpoint.

2. Tribrom-ethanol is useful as an adjuvant.

3. More attention should be paid in medical schools to the teaching of toxicology.

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VIOSTEROL OF HIGH POTENCY IN
SEASONAL HAY FEVER AND
RELATED CONDITIONS

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AND

C. I. REED, Ph.D.

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Until recently, the literature on the blood calcium and the therapeutic value of calcium in allergic conditions has been replete with contradictions. It is unnecessary in this work to do more than summarize various views. Briefly, there are those who believe that a calcium deficiency is present in allergy, and that calcium is indicated as an adjunct in treatment, and those who find no such deficiency and deny the value of calcium as a therapeutic agent in allergic conditions. Almost all the work since 1928 based on blood chemistry studies made since the development of the Kramer-Tisdall technic for calcium determination supports the latter point of view. Among the more recent workers who also review the literature to date are Cohen and Rudolph¹ and Ramirez.² In studies on a large number of various types of allergic conditions these workers found no calcium deficiency and no improvement or only transitory benefit from the use of calcium in large doses. Crip and McElroy³ in a study of forty-three patients with hay fever, twenty-one with vasomotor rhinitis and two with angioneurotic edema, found no calcium deficiency. The administration of 5 Gm. of calcium three times daily by mouth with and without parathyroid or with and without exposure to ultraviolet rays failed either to relieve the symptoms or to increase the blood calcium in these individuals. The authors explain the temporary beneficial effect of intravenous injections of calcium salts on the basis of its depressant action on the irritability

of all tissue, especially that of the nervous system, as well as its tendency to lessen cell permeability.

The use of viosterol (irradiated ergosterol) or of cod liver oil in allergic conditions has been mentioned casually in the literature since 1930. Its use has been empirical and the dosage small, with no attempt to determine its effect on the blood chemistry. Thus Brown⁴ recommends, in addition to calcium compounds for perennial hay fever, the use of cod liver oil with viosterol 10 D in doses of a teaspoonful of the mixture three times a day.

Jacobsen⁵ reports a rapid disappearance of eczema in four patients who were given viosterol.

Smith⁶ recommends the use of cod liver oil and calcium lactate as a general health measure in the treatment of asthma.

Kitsuta⁷ used cod liver oil and yeast in treating his own hay fever. He reports excellent results from the use of four teaspoonfuls of the oil three times daily.

It is now well established that viosterol produces profound effects on calcium and phosphorus metabolism, the extent and direction of which depend on the dosage, the duration of administration, the diet, the previous state of this process in the subject and probably also the individual reactivity of the subject, which in turn may depend on many factors not yet determined.

In the normal subject, administration of this substance by any route, orally, intravenously or intraperitoneally, produces an increase in the blood calcium concentration. By repeated administration and careful grading of the dose this effect may be maintained over long periods, although work in this laboratory indicates that there may be occasional remissions, not yet clearly understood. In dogs a hypercalcemia of 30 mg. per hundred cubic centimeters has been found that persisted for as much as ten days after the administration was discontinued. In human subjects we have produced a hypercalcemia of 24 mg.

In this laboratory it has been noted occasionally that administration of viosterol to normal subjects, both human beings and dogs, resulted in a lowering of calcium for two or three hours with a rise above normal one or two days later. The extent and duration of this change, together with the observed constancy of decrease of calcium elimination, suggests that the calcium disappearing from the blood must have been deposited in the bones and possibly in the soft tissues.

It appears further that small doses of viosterol result in increased deposition of calcium in the bones and possibly in other tissues, a process that may be reversed after the administration ceases and the body stores of the substance are depleted.

PROCEDURE

Our study was begun during the winter of 1930 with three patients suffering from chronic asthma and two patients with persistent and prolonged urticaria of unknown origin. We had at that time no data on the effectiveness of viosterol when given by mouth. Sterile viosterol in the concentrations of 8,000 X and 10,000 X was used. These concentrations are respectively 80 and 100 times the concentration of the 250 D commercial

9. Emerson, R. L.: *Legal Medicine and Toxicology*, New York, D. Appleton and Co., 1909, p. 359.

From the Departments of Pathology and Physiology, University of Illinois College of Medicine.

A part of the expenses of this investigation was defrayed by a grant from Mead Johnson & Co., who supplied the viosterol.

1. Cohen, M. B., and Rudolph, J. A.: *A Clinical Study of the Use of Calcium in Controlled Cases of Allergy*. *J. Allergy* 2: 34 (Nov.) 1930.

2. Ramirez, M. A.: *The Value of Calcium in Asthma, Hay Fever and Urticaria*. *J. Allergy* 71: 283 (March) 1930.

3. Crip, L. H., and McElroy, W. S.: *Atopy: Blood Calcium and Gastric Analysis*. *Arch. Int. Med.* 42: 865 (Dec.) 1928.

4. Brown, G. T.: *Perennial Hay Fever*, *Arch. Otolaryng.* 15: 202 (Feb.) 1932.

5. Jacobsen, C.: *Viosterol and Eczema*, *Deutsche med. Wchnschr.* 55: 748 (May 3) 1929; *abstr. M. Times & Long Island M. J.* 58: 20 (Jan.) 1930.

6. Smith, W. O.: *Bronchial Asthma*, *Arch. Otolaryng.* 15: 165 (Feb.) 1932.

7. Kitsuta, K.: *Hay Fever as a Symptom of Vitamin Deficiency*. *Indust. & Engin. Chem. (News ed.)* 10: 168, 1932.

preparation. In these five patients it was administered intravenously, in some daily, in others twice a week, in doses of 0.5 cc.—the equivalent of 40 cc. of 250 D when 8,000 X was used and of 50 cc. when 10,000 X was used. In the summer of 1932 our study was extended to include six ragweed sensitive patients with and without asthma complicating their hay fever.

Determinations of plasma calcium, potassium and phosphorus were made on each patient before the vios-

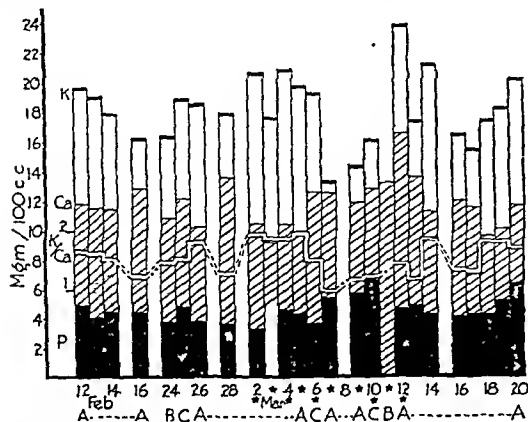


Chart 1.—The effect of viosterol (10,000 X) on the calcium, inorganic phosphorus, potassium and the potassium/calcium ratio in a patient with chronic asthma. A, severe asthma; B, mild asthma; C, no asthmatic symptoms. The star indicates the intravenous injection of 0.5 cc. of viosterol 10,000 X.

terol was administered. A minimum of three control determinations was made on heparinized blood drawn on separate days. In most cases duplicate determinations were made. In some individuals as many as eight control determinations were made to establish the normal variations. After beginning the use of viosterol the patients were seen daily for the observation of symptoms. Blood determinations were made daily on some and twice a week on others. Calcium determinations were made by the Clark-Collip modification⁸ of the Kramer-Tisdall method; phosphorus by that of Fiske and Subbarow,⁹ and potassium by that of Kerr,¹⁰ later replaced by that of Breh and Gaebler.¹¹

VIOSTEROL IN CHRONIC INFECTIOUS ASTHMA

The histories of the three patients studied may be summarized together for the sake of brevity. All had had severe to moderate asthma for six months or longer. A man, aged 60, had the condition for about twenty years. Another man, aged 35, had asthma for four years. The third, a woman, aged 46, had asthma for two years. All were tested by the cutaneous method with all the allergens generally in use and intracutaneously with ninety of the common foods and the inhalant substances. No positive skin reaction was obtained in any of the three patients. The asthma was attributed to chronic sinus infection or chronic bronchitis. Both of these conditions were sufficiently severe in all to consider infection as the likely cause of their symptoms.

The effect of viosterol on these three subjects is illustrated by the record of one of them (chart 1). The similarity of the results in the other two patients renders it unnecessary to include their records in detail.

In a man, aged 35, whose asthma was of four years' duration, the attacks were present with only incomplete

remissions for two years. Feb. 12, 1931, he was admitted to the hospital and placed on a diet containing a definite amount of calcium. Blood chemistry studies were made for eight days before the administration of viosterol. As will be noted in chart 1, a considerable variation in the levels of calcium, potassium and phosphorus was found from day to day during this period. The variation in this individual was, however, greater than in any of the other patients studied. While this degree of fluctuation may be unusual, our observations on the other subjects indicate that such a variation from day to day is not to be considered uncommon in allergic individuals.

March 2, a series of ten intravenous injections of viosterol 10,000 X in 0.5 cc. doses was begun. The detailed results are shown in chart 1.

The other two subjects responded in a similar manner. One was under observation from Dec. 15, 1930, to March 17, 1931, the other from February 26, to March 18, 1931. The first received fourteen intravenous injections of viosterol or a total of 7 cc. of 10,000 X. The blood calcium was increased from the original level of 10.66 mg. per hundred cubic centimeters to 16.0 mg. The third patient received nine injections of 0.5 cc. viosterol 10,000 X. The blood calcium varied between 10.93 and 11.85 mg. per hundred cubic centimeters during the control period. It was raised under the influence of viosterol to a maximum of 15.79 mg. per hundred cubic centimeters. In spite of the marked hypercalcemia produced in all three patients, no definite alleviation of the symptoms occurred in any of them.

THE EFFECT OF VIOSTEROL ON CHRONIC URTICARIA

To avoid erroneous conclusions resulting from spontaneous remissions of urticaria, two patients who had had daily attacks of hives for long periods of time were chosen for this study. Both were tested with foods and contact substances in the same manner as the asthma patients. No positive reactions were obtained.

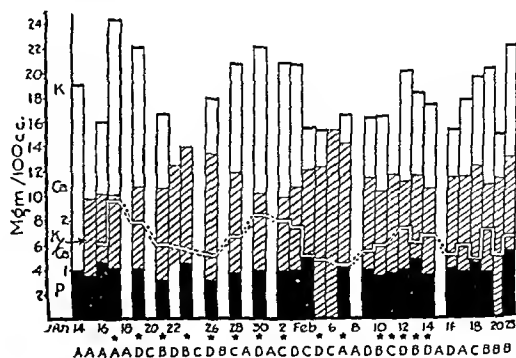


Chart 2.—The effect of viosterol (10,000 X) on the calcium, inorganic phosphorus, potassium and the potassium/calcium ratio in a patient with chronic urticaria. A, severe urticaria; B, moderately severe urticaria; C, mild urticaria; D, no urticaria. The star indicates the intravenous injection of 0.5 cc. of viosterol 10,000 X.

Both were permitted to remain on a general diet. Chart 2 summarizes the results of the study of the first patient, whose urticaria was of five months' duration. The blood calcium in this patient was 9.86 and 10.20 mg. per hundred cubic centimeters over the three days before viosterol was administered. Five-tenths cubic centimeter of viosterol 10,000 X was given intravenously twice a week from Jan. 17 to Feb. 14, 1931. The patients kept a daily record of their symptoms.

8. Clark, E. P., and Collip, J. B.: *J. Biol. Chem.* **63**: 461 (March) 1925.

9. Fiske, C. Y., and Subbarow, Y.: *J. Biol. Chem.* **66**: 375 (Dec.) 1925.

10. Kerr, S. E.: *J. Biol. Chem.* **67**: 689 (March) 1926.

11. Breh, F., and Gaebler, O. H.: *J. Biol. Chem.* **87**: 81 (May) 1930.

The blood calcium was consistently high with only an occasional fall to the level present before the beginning of the injections. On ten of the twenty-six days during which blood was drawn after beginning the treatment it was 12 mg. per hundred cubic centimeters or higher; on five days, over 13 mg., with a maximum of 15.54 mg. per hundred cubic centimeters. While some improvement occurred in the urticaria, this was not parallel with the calcium level in the blood. The

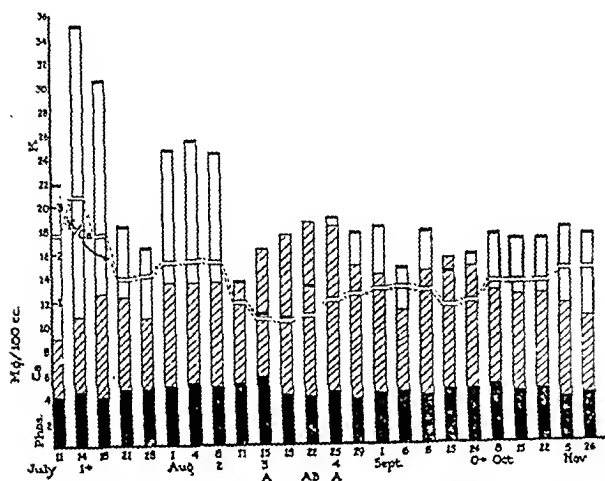


Chart 3.—The effect of viosterol (10,000 X) on the calcium, inorganic phosphorus, potassium and the potassium/calcium ratio in a patient with seasonal hay fever: 1. 0.5 cc. 10,000 X viosterol by mouth daily. 2. 1.5 cc. 10,000 X viosterol by mouth daily. 3. 2 cc. 10,000 X viosterol by mouth daily. 4. 1 cc. 10,000 X viosterol by mouth daily. O, administration discontinued. A, very mild nasal itching. B, vomited.

improvement was temporary and was consistent with the history of slight spontaneous remissions that had occurred previous to the administration of viosterol. January 28, the first patient began to have daily headaches. February 2, she experienced dizziness and weakness, symptoms subsequently determined to be due to overdosage of viosterol. The symptoms subsided when the injections were omitted for one week. It will be noted in chart 2 that the blood calcium was maintained at a fairly high level for nine days after the injections were discontinued.

The second patient with urticaria had had daily attacks for from four to five years. These were more marked during the premenstrual and menstrual periods. The study began on Jan. 2, 1931, and ended, February 21. She was seen daily. A total of thirty-one blood determinations were made during the fifty-two days of observation. The blood calcium under treatment was raised from 11 mg. per hundred cubic centimeters to a maximum level of 13.7 mg. per hundred cubic centimeters. As in the preceding case, no improvement was observed.

THE EFFECT OF VIOSTEROL ON POLLEN SENSITIVE PATIENTS

This is a preliminary study of the effect of massive doses of viosterol on the calcium metabolism and symptoms of seasonal hay fever and asthma.

Six known ragweed sensitive patients were chosen for this study. We selected intelligent individuals whose symptoms had been severe during previous seasons. Viosterol 10,000 X was taken by all of them in doses to be indicated later, from about July 20 on. No other medication was used either locally or internally. In spite of the definitely beneficial results to be recorded later we hesitate at present to draw any but the most

tentative conclusions from such a small group of patients.

To conserve space, the protocols and charts of two of the patients are given, while the results on the other four are more briefly summarized.

E. S., a girl, aged 15 years, had had autumnal hay fever for many years but no asthma. She had never had any treatment. Blood for control determinations of calcium, potassium and phosphorus was drawn on July 11, 14 and 18, 1932, and thereafter twice a week (chart 3). She began taking 0.5 cc. of viosterol by mouth daily on July 18. On August 8, the dose was increased to 1.5 cc. daily. On August 15 she complained of itching of the nose. The dose was increased to 2 cc. daily. She became nauseated and vomited, August 22. The dose was reduced to 1 cc. daily and the symptoms disappeared. Aside from the complaint on August 15, she had no hay fever symptoms during the entire season. She discontinued taking viosterol on September 24. This is the only one of the six cases for which practically 100 per cent relief of symptoms could be claimed.

One other patient of this group had hay fever uncomplicated by asthma. A man, aged 21, a medical student, had symptoms which were of six years' duration. One season of prophylactic pollen injections had resulted in an estimated 50 per cent relief. Another summer of phylactic treatment had given him somewhat less relief. He was given 0.5 cc. of viosterol 10,000 X by mouth daily. His estimated degree of relief, confirmed by frequent observation and questioning, was 90 per cent.

The other four patients in this group all had autumnal asthma complicating their hay fever. The following protocol of one of them is given while the histories of the others are summarized more briefly.

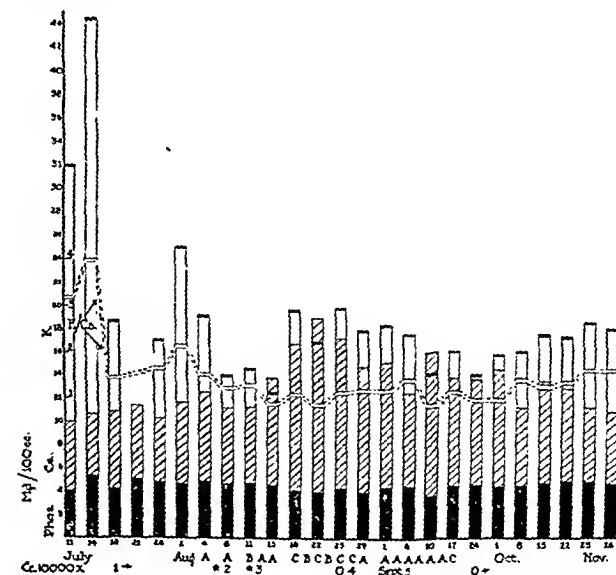


Chart 4.—The effect of viosterol (10,000 X) on the calcium, inorganic phosphorus, potassium and the potassium/calcium ratio in a patient with seasonal hay fever and asthma: 1. 1.05 cc. viosterol 10,000 X daily by mouth. 2. 1 cc. viosterol 10,000 X daily by mouth. 3. 1.5 cc. viosterol 10,000 X daily by mouth. 4. 0.6 cc. viosterol 10,000 X daily by mouth. 5. 0.3 cc. viosterol 10,000 X daily by mouth. O, administration discontinued; A, very mild nasal symptoms; B, nausea and vomiting; C, moderately severe hay fever symptoms.

M. N., a woman, aged 25, had autumnal hay fever for twenty years associated with asthma (autumnal) for eighteen years. She had preseasonal injections of pollen during the previous three years with an estimated 50-per-cent relief each season. Control blood samples were drawn on July 11, 14 and 18. Treatment

with 0.5 cc. daily of viosterol 10,000 X by mouth was begun on the last day. Blood was drawn semiweekly after that (chart 4). August 8, the dose was increased to 1 cc. daily. Abdominal cramps and nausea developed. She varied the daily dose from 1 to 1.5 cc. until, August 21, she was complaining of nausea and vomiting frequently, but attributed this to the daily consumption of a quart of milk. Because of these symptoms she finally discontinued taking the viosterol from August 25 to August 29. After that she varied the dose between 0.3 and 0.5 cc. Even with this dose she occasionally developed slight nausea and was compelled to reduce the dose further to an amount varying from 0.15 to 0.3 cc. daily until September 23, when the administration of viosterol was discontinued permanently.

Moderately severe hay fever symptoms were present August 16 and 17, following a golf game. No symptoms were present thereafter until August 22, when again, after an afternoon on the golf course, she had moderate hay fever for the next two days and severe symptoms on the third day. Slight nocturnal asthma was present from August 25 to August 29. The chest, on examination in the daytime, was normal during this period. At this time the patient stated that so far she had been protected to a degree of more than 75 per cent as compared to a season without treatment. From then on she had only slight to moderate hay fever daily until September 17. After that she was free of symptoms. At the end of the season she again claimed to have had about 75 per cent relief and was certain that the degree of relief was greater than she had previously had from prophylactic injections of pollen.

The second patient of this group was a woman, aged 25, who had developed symptoms during August, 1931, for the first time. Her asthma was severe and lasted from August 20 until November. She had no treatment other than palliative measures during that period. With viosterol in doses varying from 1 to 0.3 cc. daily she estimated that she had 75 per cent relief during the 1932 season.

Another patient, a woman, aged 32, had autumnal hay fever and asthma for fifteen years. From September 1 to October 1, every year, the asthma was practically continuous and so severe that she had to rest in a chair during the night. She had lost 15 pounds (6.8 Kg.) during this period each year. No other except palliative treatment had previously been tried. She was able to take from 0.5 to 2 cc. of viosterol 10,000 X daily. Only one severe asthma attack and nine mild nocturnal attacks occurred during the season. She lost only 4 pounds (1.8 Kg.) during the period. Her estimated degree of relief was 80 per cent.

The fourth pollen asthma patient was a woman, aged 25, who had had this complaint since early childhood. During the preceding two years she had had only slight relief from intensive prophylactic treatment given in our allergy clinic. The amount of viosterol 10,000 X was at first 0.5 cc. daily. This was later increased to 2.5 cc. daily. Her asthma was much milder than during previous seasons. She estimated a degree of relief of 75 per cent.

COMMENT

The attitude in the medical profession toward the administration of viosterol of high potency is strongly conservative. Judging from experience in this institution this attitude need no longer be so conservative. The early symptoms of overdosage are easily recognizable and apparently the subjects recover readily without permanent injury.

The most common early symptom is nausea, sometimes accompanied by vomiting and less frequently by abdominal cramps and diarrhea. Later symptoms are headache, muscular weakness, pain in the muscles and joints, dizziness and occasionally numbness and tingling in the extremities. These symptoms are not distinctive, but it appears probable, when they occur in a subject during the administration of viosterol and disappear on discontinuing the administration of viosterol or on reducing the dose, that they are due to the treatment. They may occur singly or in any combination. In fact, the same subject may display very different symptoms at different times.

So far as we have been able to determine, there are no criteria by which a subject's susceptibility to toxic action may be discovered in advance. Certainly the blood studies give no indication of the imminence of toxicity, either in animals or in human subjects. One peculiar manifestation is that the tolerance of the same subject seems to vary at different times, quite independent of correlation with any observed factor. In general, of course, there is *usually* pronounced hypercalcemia with toxicity, but the correlation is not invariable.

The route of administration is of some interest. In animal experiments the practice was instituted four years ago of injecting the oil solution intravenously.¹² Subsequently this method was adopted by Reed and Seed¹³ in human patients and in the earlier studies reported in this paper. In normal and parathyroidectomized dogs and in tetany patients the material appears to be more effective when given in this manner than by the oral route. This difference appears to be purely quantitative rather than qualitative and is probably due, first, to incomplete absorption of the ingested material and, secondly, to partial reduction to coprosterin in the intestine.

Many investigations have indicated that the absorption of calcium from the intestine is facilitated by viosterol, but there is no evidence that this is due to its local application by ingestion. On the other hand, we have some evidence to be reported later that this effect is produced quite as readily by intravenous administration.

Still further, the accelerated mobilization of calcium in the blood can be demonstrated when no calcium is ingested. All of this points to an intrinsic locus of action of viosterol.

That the intravenous injection did not produce as profound effects on the calcium-phosphorus metabolism in the earlier series as did the oral administration in the more recent study might be interpreted as contrary to these statements. However, attention is called to the fact that the total amount administered in the second series was much greater than that in the first, and it is probable that this alone would explain the apparent discrepancy.

The changes in the blood calcium and potassium in this entire group, especially in the hay fever patients, showed characteristics that are striking because of their uniformity. During the control period there were marked fluctuations in the blood calcium and potassium, especially in the latter. Differences as great as 3 mg. per hundred cubic centimeters in the calcium range were found in the same patient on different days before

12. Reed, C. I., and Thacker, E. A.: The Effects of the Intravenous and Intraperitoneal Injection of Irradiated Ergosterol, *Am. J. Physiol.* 96: 21 (Jan.) 1931.

13. Reed, C. I., and Seed, Lindon: The Treatment of Clinical Tetany with Irradiated Ergosterol, *Endocrinology* 17: 136 (March-April) 1933.

treatment was initiated. The potassium range varied even more during this period, rising from the low level of 12 mg. on one day to 25.14 mg. per hundred cubic centimeters four days later in one individual. The resulting potassium/calcium ratio was very irregular on various days, falling from 4 to 1.8 mg. in a four day interval in one patient. In general, the ratio was high, usually above 2 mg. during the control period. This irregular, high potassium/calcium ratio was maintained for about two weeks following the beginning of viosterol administration. After that, a change occurred which again was fairly uniform in all six patients. The calcium increased—to concentrations above 18 mg. and 21 mg. in two of the patients. The potassium, while rising and falling slightly with the fluctuations in calcium, showed a definite tendency to remain relatively low and stable compared to the high peaks reached previous to treatment. The result is a relatively stable potassium curve. Occasionally, with a sharp rise in calcium the potassium level was actually lower than the calcium. This occurred one or more times during the observation period in four of the six patients.

The picture is even more clearly brought out as one follows the potassium/calcium ratio. This, as previously mentioned, was at first irregular with sharp fluctuations. About two weeks after the beginning of treatment, the curve became plateau-like, with only minor fluctuations. In addition, the tendency was toward a low ratio, almost constantly below 1.5, falling occasionally below 1.0 in all except one case, which was insufficiently studied.

The wide fluctuations of the calcium level in most of the patients during the control period when the blood was examined daily or at intervals of several days leads us to emphasize the fallacy of grouping patients as cases of hypocalcemia or hypercalcemia on the basis of one blood examination. The variability of these elements under normal conditions is shown by the work of Petersen and Levinson.¹⁴ In a group of 100 "normal" individuals they report a calcium range of 8.2 to 12.7 mg., a potassium range of from 16.6 to 27.4 mg. and a potassium/calcium ratio of 1.7 to 2.4.

While similar effects on the blood chemistry were produced by viosterol in all of our patients, the clinical results permit their division into two groups. The first group consists of the two patients with chronic urticaria of unknown origin and the three asthmatic patients whose symptoms were probably due to chronic respiratory infection. These were not improved by the treatment. The second group consists of the six patients whose allergic symptoms were caused by known inhalants, allergy of extrinsic origin. All of these were definitely benefited by viosterol treatment. It is possible that the underlying mechanism of asthma due to respiratory infection (intrinsic asthma) differs from that caused by inhalants (extrinsic asthma).

It is to be emphasized that our purpose in this preliminary work was to observe the effect on symptoms of marked changes in the calcium, phosphorus and potassium metabolism. To accomplish this, massive doses of viosterol, approximating the limit of tolerance in each patient, were given. To use such doses in the treatment of allergic conditions would not only be impractical but might in some cases be injurious. The marked disturbances in the calcium and potassium concentrations and relationship are so far from the

physiologic normal limits that they are not to be recommended. There is the danger in patients with arteriosclerosis, especially of the coronary arteries, of increasing temporarily the blood and tissue calcium to abnormal levels.

The effective dose of viosterol that will not produce marked changes in the potassium/calcium ratio and yet be of therapeutic value in allergic conditions is to be determined in future work. It is possible that the hypercalcemia produced is neither an index of the degree of benefit nor possibly even a cause of the improvement. The biologic effects of viosterol on other factors not determined in this work require study before any conclusion may be drawn as to what is responsible for the improvement in some allergic conditions when it is administered.

Only one of the six hay fever patients observed obtained complete or nearly complete relief. The others enjoyed what they termed marked relief. Four of the six had had severe asthma during previous seasons. All had asthma in spite of viosterol treatment. It was, however, much less severe than during any previous year. It would be presumptuous to make any comparison based on such a small group about the relative value of viosterol in massive doses compared to any other form of treatment of hay fever. It is our purpose in a later work to determine the effect of smaller doses of viosterol on hay fever patients with and without therapy with pollen extract. It is our belief at present that viosterol may prove to be of value as an adjunct treatment, especially in those who are not benefited by injections of pollen extract.

SUMMARY AND CONCLUSIONS

1. The effects of viosterol of high potency have been studied in a group of three patients with infectious asthma; a group of two urticaria patients and a group of six seasonal hay fever patients. Viosterol had no effect on the symptoms in the two patients with urticaria nor the three with chronic asthma due to respiratory infection. All hay fever patients were well protected during the season of 1932 as compared to symptoms during previous seasons; one was relieved almost entirely.

2. The blood calcium and potassium in allergic individuals determined on different days during control periods show marked variations in the same individuals.

3. Massive doses of viosterol raised the calcium to very high levels, lowered the potassium level, diminishing its wide fluctuations, and stabilized the potassium/calcium ratio at a relatively low level.

4. The threshold of toxicity varies in different individuals and may even vary in the same subject at different times.

5. Toxic symptoms are readily recognized and quickly abated on discontinuance or reduction of the amount administered.

1853 West Polk Street.

Increase in Disseminated Sclerosis.—During the last decade disseminated sclerosis has undoubtedly occurred with increasing frequency, and at the present time few neurologists would challenge the statement that in this country it is now the commonest organic disease of the nervous system, not even excluding neurosyphilis. Although its etiology still remains obscure and but little progress has been made in either its prevention or treatment, some advance is apparent toward a better understanding of the clinical aspects of the disease.—*Problems of Disseminated Sclerosis, J. Neurol. & Psychopath. 13:227 (Jan.) 1933.*

14. Petersen, W. F., and Levinson, S. A.: The Skin Reactions, Blood Chemistry and Physical Status of "Normal" Men and of Clinical Patients. *Arch. Path.* 9: 151 (Jan. pt. 2) 1930.

THE USE OF DEHYDRATION IN
EPILEPSY

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AND

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Rowntree¹ and his co-workers, in a series of papers the first of which appeared in 1923, pointed out the effect that extremely large amounts of water have on animals if given by stomach tube. Water intoxication is characterized by restlessness, asthenia, polyuria, diarrhea, salivation, nausea, retching, vomiting, muscle tremor and twitching, ataxia, tonic and clonic convulsions, frothing at the mouth, stupor and perhaps death. The symptoms given in the foregoing sentence can be prevented by the timely administration of hypertonic solution of sodium chloride. Signs of water intoxication could not be produced except rarely if the water was given by rectum, intravenously or directly through a fistula into the duodenum. Rowntree reported an increase in intracranial pressure in his one flawless experiment. Lennox and Fremont-Smith found no increase in the spinal fluid pressure either in an epileptic patient who drank 1,000 cc. of water as rapidly as possible or in one who drank 200 cc. every half hour until a total of 1,200 cc. was taken.

McQuarrie,² in 1929, wrote on the relationship of water balance to the occurrence of the seizures in epilepsy; he concluded that stringent restriction of fluids lead to dehydration of the tissues and prevention of fits. Suddenly increasing the intake of water, says McQuarrie, during the course of dehydration tends to cause recurrence of seizures, at least in severe cases. He thought that the disturbance of water balance, perhaps affecting the nervous system more specifically, appears to be closely identified with the etiology of epilepsy. Fay³ wrote along the same lines and put forward a mechanical theory of epilepsy.

Cameron⁴ carried out dehydration in a series of typical institutional epileptic patients and found that no improvement resulted. Riley⁵ gave his opinion that the dehydration theories in epilepsy were without merit and that he had never had any successful results in the control of seizures by limiting the fluid intake. Cobb⁶ does not deny that water restriction may be beneficial to some patients, or that water drinking may, in some cases, increase the number of attacks.

Since 1929, we have been testing the effect of hydration and dehydration in epileptic patients, the majority of whom have been patients in the Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne, Pa. Most of them were "standardized," so to speak, as far as diet, habit of living, sedative drugs and work are concerned, and no changes were made (with rare exception) while the effect of varying levels of fluid intake was studied.

The patients were chosen from among the 130 residents of the colony farm, an attempt being made to select only those who had a reasonable amount of intelligence so that some degree of cooperation could be expected. There were eighteen women and five men in the group tested. The youngest person was 9 years of age, the eldest 55. Most of the patients had active epilepsy and averaged for the most part from 100 to 300 convulsions a year, although a few were more quiescent and had only a few fits yearly.

In six of the patients the fluid intake alone or, in addition, the fluid output was measured and recorded; in these cases no attempt was made to control the amount of fluid taken per day. In the remaining cases, in addition to recording the fluid intake and output per twenty-four hours, the patients were definitely instructed as to the amount of fluid allowed per twenty-four hours, whether the amount was high or low, and every effort was made to have these orders complied with.

The fluid intake included all the water, milk, fruit juices, broths and soups consumed by the patient, but no attempt was made to estimate the water content of the food eaten. Likewise, the fluid output was the total urinary output per twenty-four hours with no effort being made to estimate the fluid content of the feces or the water loss through perspiration or respiration.

When restriction of fluids was instituted it was discovered that some of the patients were consuming 16 ounces or less in twenty-four hours and one patient averaged an intake less than 10 ounces for twenty-four hours for a period of a month. When a patient was ordered on excessive fluid, he consumed 64 ounces or more a day. During the summer months it was extremely difficult to keep the patients on a restricted intake of 16 ounces or less. The patients were maintained for at least a month at a certain fluid level and were then changed or allowed to remain on the same fluid intake, according to the results obtained.

No patient is more difficult to control than an epileptic patient; this is so in every respect but especially in relation to his desire for food and drink. Some may have cheated on the low intake, but the figures given for those on forced fluids we know are reliable because the fluid was given by a nurse and drunk in her presence. The only manner in which an epileptic patient (or any one else) can be kept on an intake of much less than 500 cc. in twenty-four hours is to lock him up.

Attacks are recorded without an attempt being made to separate them into grand and petit mal; a fit is a fit, and the so-called minor spell is as potentially harmful as the grand attack—some think more so.

In most of the patients there was no definite relation to the number of fits and the fluid intake. In some, limitation of fluid seemed to decrease the attacks for a month or two, but if the amount of fluid was then greatly increased, some had a decrease of fits. Not infrequently, a patient on 2,000 cc. or more of fluid who was then abruptly placed on a restricted intake of 750 cc. had more attacks than when he was on hydration. One man who had been having from two to five attacks a month for the year before admission was given 1½ grains (0.1 Gm.) of phenobarbital and left to his own desire regarding fluid, except to measure the intake. He has had no attacks for ten months; his average daily intake in that time has been between 2,500 and 3,000 cc. If we had restricted his intake to

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1. Rowntree, L. G.: Water Intoxication, *Arch. Int. Med.* **32**: 157 (Aug.) 1923.

2. McQuarrie, Irvine: Epilepsy in Children, *Am. J. Dis. Child.* **38**: 451 (Sept.) 1929.

3. Fay, Temple: *Am. J. Psychiat.* **8**: 783 (March) 1929.

4. Cameron, D. E.: *Am. J. Psychiatry.* **11**: 123 (July) 1931.

5. Riley, H. A., in discussion on Fremont-Smith, Frank: *Arch. Neurol. & Psychiat.* **28**: 240 (July) 1932.

6. Cobb, Stanley: Causes of Epilepsy, *Arch. Neurol. & Psychiat.* **27**: 1245 (May) 1932.

500 cc., what an addition he would have been to the dehydration theory!

One patient became extremely dull on hydration, and the condition cleared up on restriction of fluid to 500 cc., yet when that level of fluid was maintained and the sedatives (1½ grains of phenobarbital and 15 grains [1 Gm.] of sodium bromide in twenty-four hours) were withdrawn, he had a burst of seizures within two days. A woman, aged 26, was on a level of 558 cc. for two months and had three attacks; the following month the daily average was 651 cc. and she had 818 seizures; no change was made in the medication. In many cases a six months average of fits on low and high intake, compared with the preceding year's record, during which no restriction or forcing of fluid occurred, showed practically no difference.

Lack of space prevents the printing of the tables.

COMMENT

The treatment of epilepsy has remained one of the unsatisfactory phases of medical science. Any procedure, therefore, that will diminish the failures should be grasped and use made of it immediately. The very helplessness with which the treatment of this disease is viewed has made it possible for many "cures" to be brought forward, but, like the "snow flake on the river, a moment here then gone forever," they are soon relegated to the limbo of forgotten therapeutic endeavors. Who, now, even among the most radical of visionaries, recommends to an epileptic patient that he (a) have the colon extirpated or, as Peterson said, have it reduced to a semicolon; (b) have a hole made in the appendix and the colon irrigated; (c) have *Bacillus cinnamatus* eliminated from the gastro-intestinal tract; (d) be castrated (especially the female); (e) have the cervical sympathetic removed; (f) have the head opened on meager evidence; (g) have the actual cautery applied to the scalp, and, for a good result, the scalp burned down to the skull; (h) suffer various cerebral arteries to be tied; or—but why prolong such a recital? Yet many of the foregoing "cures" were the talk of their day and from time to time are reviewed or rediscovered by diligent readers of medical history. Thus, only recently an otolaryngologist of repute asked permission to perform turbinectomies on a series of epileptic patients. He had read some old papers on the subject and thought the procedure should be resurrected.

Is there any value to the epileptic patient in dehydration? To answer that question we have studied a large number of patients in the last four years, a few of whose records have been reviewed.

An occasional patient of ours did well on dehydration, but so also did an occasional subject seem to do well on an excess of fluid. Forcing fluid did not cause a burst of fits any more often than dehydration seemed to do. On a number of occasions we have tried the following test: A patient was placed on full dehydration and a brand of phenobarbital alone, or in conjunction with bromide; he was kept on that treatment for a month. Then he was given 2,000 cc. or more of fluid in twenty-four hours for a month and the same dosage of drugs was continued. Little or no change resulted in the number of fits though the change was often downward. The patient was then put back on dehydration and the sedatives were withdrawn. As a rule, a series of seizures occurred, not infrequently of a severe status. Fetterman and Kumin⁷ have had a

similar experience. In six instances we had epileptic patients drink large quantities of water, from 1,000 to 2,000 cc. in a few minutes, and they did not show an increase of fits.

The earlier an epileptic patient is seen after his first attack and the sooner treatment is instituted, the better will be the result, at least temporarily. Many children who have had convulsions go for months or even years without any medication or treatment, and without fits. If a few such patients are grouped under any plan of treatment, misleading conclusions may be drawn. A new treatment is often tried in conjunction with all forms of therapy thought to be of value in the disease, and any improvement that occurs to the patient is attributed to the "new" and not to the combination of things. Such is the case in the treatment of epilepsy.

CONCLUSION

Dehydration may be of service in the treatment of some epileptic patients if combined with other accepted forms of therapy. By itself, it is not of much value. Status may develop in patients on extreme degrees of dehydration. Bursts of fits do not occur regularly or frequently if large amounts of fluid are given after a period of dehydration.

133 South 36th Street—301 South Church Street.

EMBRYONAL CARCINOMA OF ABDOMINAL TESTIS IN A PSEUDOHERMAPHRODITE

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The rarity of this case prompts me to record it. It is recorded also because it demonstrates the value of the Aschheim-Zondek test in determining the post-operative prognosis of a malignant growth of the testicle.

History.—F. T., aged 33, consulted me for a congenital anomaly in 1917. His parents, three sisters and two brothers had no physical abnormalities. The past history was irrelevant. His social, physical and sexual inclinations were masculine. He was shy mannered and hypersensitive about his physical defect. His height, weight and muscular development were below the average for his age. Although his voice, skin, body contour and distribution of pubic hair were decidedly feminine, his breasts were those of a male. The genitalia consisted of a rudimentary imperforate penis, which was fixed firmly to a median raphe extending below to a bifid scrotum, each half of which resembled a labium majus. The penis, which appeared more like an enlarged clitoris, lacking mobility, had no physiologic function. In the middle of the cleft dividing the scrotum was a small vaginal introitus about one-half inch deep, which admitted the tip of the index finger. The urethral opening, in position and appearance, was similar to that in a female. There were no testes palpable in either the scrotum or the inguinal canals, and rectal examination did not reveal a prostate. I classified the patient as a pseudohermaphrodite.

In 1919, he was operated on for an acute suppurative appendicitis and for obvious reasons his pelvis was not explored to determine the character of his generative organs.

Nine years later he underwent a plastic operation to relieve him of painful erections and to enable him to have coitus. The results of this procedure were most gratifying to the patient, as they converted him from a dejected, impotent individual into a happy and sexually active one.

Oct. 1, 1932, at 8:30 a. m., I was called to see him for the unusual surgical condition described in this report. Inquiry disclosed that at 7 o'clock in the morning he was seized with

7. Fetterman, J. L., and Kumin, H. J.: *Dehydration in Epilepsy*, J. A. M. A. 100: 1005 (April 1) 1933.

sudden agonizing, cramplike pains, localized at first below the umbilicus and later becoming generalized throughout the abdomen. An uncontrollable vomiting and a clammy profuse perspiration supervened. He stated that he had sustained no injuries, that his bowel movements had been normal, and that

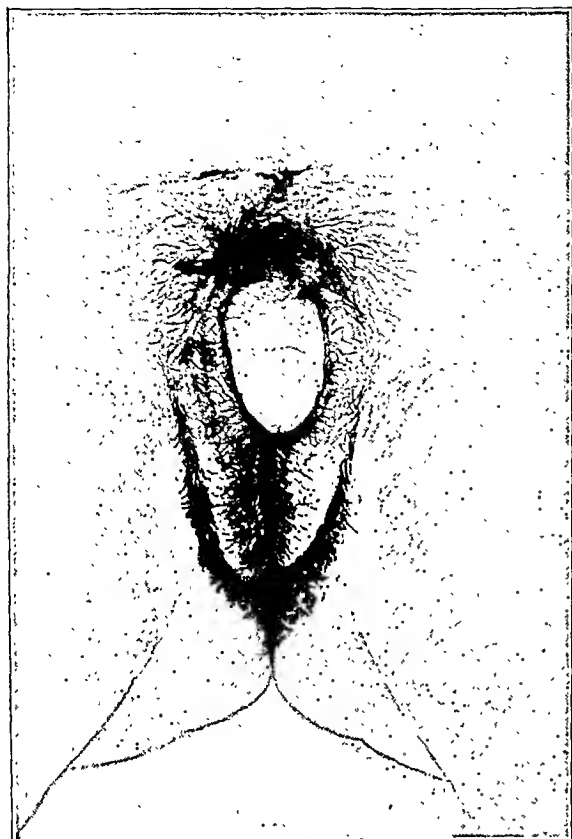


Fig. 1.—Female distribution of pubic hair, underdeveloped penis and bifid scrotum in a male pseudohermaphrodite.

for six months the lower part of the abdomen had been getting larger and, although it felt quite hard, had never been painful. His appetite throughout had been fairly good and there had been no loss in weight. The patient, during my interrogation, brought up at intervals a bile-stained watery vomitus.

Physical Examination.—Since his plastic operation the masculinity of the patient had become more pronounced. His chin was covered with a thin beard; his muscles were appreciably developed and the genital organ had doubled in size. He was lying on his back, with knees flexed and both hands holding the lower part of his abdomen. The mucous membrane of his lips was slightly cyanotic, the skin pale and his facies pinched. His pulse was 70 to the minute; the rectal temperature was 97.4 F. With the exception of a weak apex beat, nothing abnormal was found in his heart or lungs. The abdomen showed a scar lateral to the right rectus and a very prominent uniform swelling rising from the pubic region, in the midline, to about 1 inch below the umbilicus. Spasm of the rectus muscles over a hard, smooth and slightly movable tumor mass was very marked. Percussion over the mass elicited pain and a flat note; above and to either side it produced a slightly tympanitic sound but no evidences of free fluid. The liver and spleen were not enlarged. Rectally, a doughy painful mass, slightly movable and apparently not a part of the large bowel, could be readily palpated. The inguinal, axillary and supraclavicular glands were not enlarged, and there were no points of tenderness found over the palpable bones of his body. The bladder was distended. The reflexes were all normal. A provisional differential diagnosis was made between a malignant growth of an abdominal testis and torsion of an ovarian cyst.

On admission to the hospital his rectal temperature was 98 F., and the pulse 60 to the minute. A blood count showed red blood corpuscles, 3,800,000; hemoglobin, 65 per cent (Tallqvist); color index, 0.8; white blood corpuscles, 10,900; polymorphonuclears, 80 per cent; lymphocytes, 20 per cent; blood type II, Moss classification. A urinalysis showed nothing abnormal. Roentgenograms of the lungs, heart and abdomen disclosed nothing abnormal.

As the patient had been unable to empty his bladder completely prior to his present illness, he was catheterized under a general anesthetic. Thirty ounces of a concentrated urine was obtained and the pain was temporarily relieved. His condition in the ensuing twenty-four hours became progressively worse.

On the morning of October 2, the attending genito-urinary surgeon, Dr. McPartland, and I examined him. Since first being observed he had acquired a ghastly pallor; his breathing was shallow and dyspneic, and his pulse was barely perceptible. The abdomen, boardlike in rigidity, gave rise to excruciating pains when pressed. Following a second catheterization by Dr. McPartland, which did not relieve him, he was given intravenously 1,000 cc. of a 5 per cent dextrose solution and prepared for an exploratory laparotomy.

At 3 p. m., under local procaine hydrobromide and gas-oxygen anesthesia, a laparotomy was performed through a mid-right incision. When the peritoneum was incised there was an immediate and uncontrollable gush of blood, which poured from all parts of the abdominal cavity. An exploration of the pelvis disclosed a tear about 4 inches long in the posterior surface of a pelvic tumor, the pedicle of which was attached to the peritoneum in front of the right iliac vessels and had undergone torsion. Fortunately, a part of the omentum had forced itself into the rent and so, acting as a plug, had partially controlled the bleeding. The pedicle was rapidly



Fig. 2.—Urethral opening and cleft dividing the scrotum in a male pseudohermaphrodite.

untwisted and cut between two clamps placed at its base, and the tumor was quickly delivered and ablated. The stump was then ligated with number 3 chromic catgut. Being informed by the anesthetist that the patient was pulseless, colorless and dyspneic, we made no attempt to ascertain the absence or presence and nature of other generative organs. Two

cigaret drains were placed in the pelvis and the wound was closed in layers. A transfusion of 600 cc. of citrated blood was immediately given, followed by 1,000 cc. of physiologic solution of sodium chloride intravenously.

On his return to the ward, the patient was placed in a shock position and given 1,000 cc. of 5 per cent dextrose in the subpectoral regions. He reacted well to the measures employed for combating the operative shock.

Postoperative Treatment.—A continuous rectal drip was instituted, consisting of 5 per cent dextrose and sodium bicarbonate; to relieve his vomiting, gastric lavage was done through a Levine tube, and to restore his fluid volume 1,000 cc. of physiologic solution of sodium chloride was given intravenously twice a day. A few days after the operation he was placed on a liver diet, and iron was given after meals. He was discharged from the hospital, November 2, in good condition.

Feb. 4 and 18, 1933, an area 20 inches square on the anterior part of the pelvis and February 11 and 25 on the posterior part was given roentgen irradiations. A voltage of 200 kilovolts was used. The filter was 0.5 mm. of copper with 1 mm. of aluminum. The distance from target to skin was 43 cm.

Pathologic Examination.—The specimen consisted of a globular tumor 15 cm. in diameter, having on its smooth surface

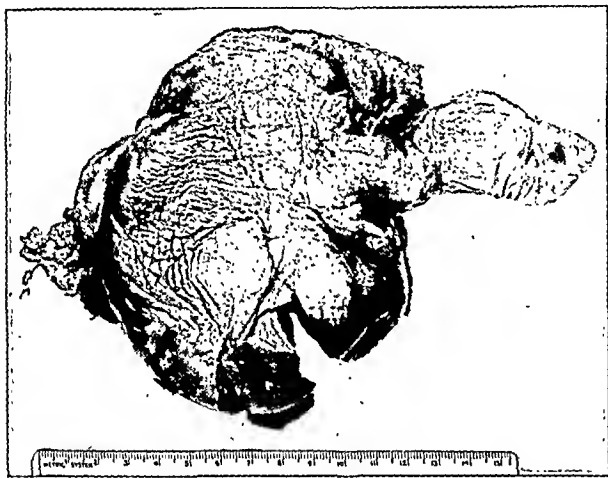


Fig. 3.—Embryonal carcinoma of abdominal testis in a male pseudohermaphrodite. Specimen unopened.

a tear 10 cm. long, which extended into its body. Attached to the surface opposite to the tear was a pedicle 6 cm. in length and approximately 2 cm. in diameter with constrictions on it suggesting torsion. When the tumor was opened it showed a rough irregular cavity the inner wall of which was very irregular and composed of chocolate brown, friable tissue. The walls of the cavity measured from 1 to 3 cm. in thickness, and when sectioned the tissue was soft, very friable and mottled chocolate brown and dark red. Sections were taken from various portions of the mass for histologic examinations.

Microscopic examination was done by Dr. James Ewing, who reported that sections showed a diffusely growing, large round and polyhedral cell carcinoma. The tissue was very soft and the stroma delicate and infiltrated with lymphocytes in many places. Dr. Ewing thought this a rather typical teratoid cancer and of teratoid origin not derived from adult tubule cells, as tumors that may possibly originate from tubule cells and may be called seminoma generally are more alveolar in structure and lack lymphoid stroma. Yet he stated that he would not insist too strongly on the exact derivation of this particular tumor, which impressed him as an embryonal growth.

December 1, the Aschheim-Zondek (Friedman modification) reaction was negative.

January 6, February 15, March 17 and April 11, Dr. Russell S. Ferguson did a quantitative test and reported that at each assay he found 100 mouse units of prolan A per liter of urine.

That amount, he stated, was consistent with clinical cure for the type of tumor which the patient had.

Summary.—A male pseudohermaphrodite, aged 33, with retained abdominal testes, developed the symptoms of an acute condition of the abdomen associated with severe shock. Physical examination showed rigidity of the rectus muscles and a tumor mass rising from the pelvis nearly to the umbilicus. There were no clinical evidences of metastases. Exploratory

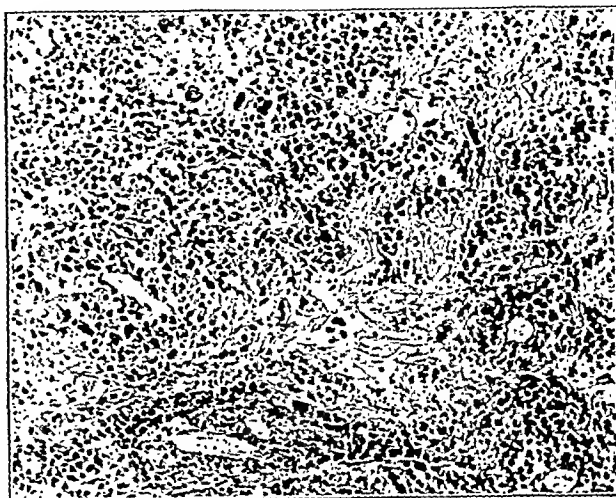


Fig. 4.—Embryonal carcinoma of testis; reduced from a photomicrograph with a magnification of 125 diameters.

laparotomy revealed torsion of the pedicle of an embryonal testicular carcinoma which had ruptured and bled in the abdominal cavity. The patient recovered from the operation and had a negative Aschheim-Zondek reaction over a period of six months. This, together with the fact that he had no symptoms of recurrence or metastases, pointed to a clinical cure of his condition.



Fig. 5.—Embryonal carcinoma of testis; reduced from a photomicrograph with a magnification of 125 diameters.

COMMENT

An exhaustive search of the literature has not disclosed a similar case. The primary purpose of this report, however, is not to discuss statistics nor to consider the etiology, pathology and treatment of testicular neoplasms but rather to emphasize the dangers inherent in abdominal testes and to advocate periodic examinations of individuals with such anomalies and the use of the Aschheim-Zondek test for the purpose of detecting malignant conditions much earlier.

The Aschheim-Zondek reaction, from a study of a preliminary report by Ferguson and his associates,¹ is a reliable test for differentiating between malignant and benign neoplasms of the testicles. It is also valuable in detecting postoperative recurrences or metastases and observing the results of roentgen therapy in such cases. Dr. Ferguson stresses the importance of injecting the extracted hormone into female immature mice in order to observe the reaction. He found that the quantitative tests, as ordinarily performed on the rabbit, are of little value, as the excretion in two thirds of the cases is less than that required to activate the rabbit ovary.

PNEUMOCOCCIC INFECTION OF THE SACRO-ILIAC JOINT COMPLICATING PREGNANCY

TREATED BY RADICAL RESECTION OF THE ILIUM

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Acute pyogenic infections of the sacro-iliac joints have long been recognized as severe menaces to life. The extension into the fascial planes of the pelvis and the development of an osteomyelitis of the ilium

Similar cases may have been reported under indefinite titles, but these are not available for review. No reference of such an infection complicating pregnancy was found. The following two cases of pneumococcic infections of the sacro-iliac joint complicating pregnancy are reported because of the apparent rarity of such involvement of this joint, the difficulty of diagnosis and the successful results following radical measures employed to promote drainage.

REPORT OF CASES

CASE 1.—E. H., a white woman, aged 20, married, was admitted to St. Luke's Hospital, in the gynecologic service of Dr. H. O. Jones, Jan. 19, 1932. Her chief complaint consisted of pain in the right leg of two days' duration and vaginal bleeding, which had been present for two and one-half weeks. She had had an abortion done by a midwife, January 3. The abortion being incomplete, the patient began to bleed about one week later, and this bleeding continued for about four days. She had felt quite well generally until January 15, when she began to complain of pain in the region of the right hip. This followed a run of a short distance and gradually became more severe. A local physician was called and a diagnosis of pelvic infection following abortion was made. Her temperature at this time was noted to be 102, and she was put to bed and given a sedative.

A general examination and history revealed no essential factors other than the pain located in the lower part of the abdomen, the region of the right hip and buttock. Her tem-

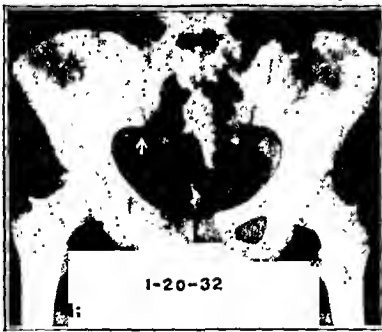


Fig. 1 (case 1).—Pelvis essentially normal except for narrowing of right sacro-iliac joint line and some loss of definition of the iliac margin in the lower half of joint, Jan. 20, 1932.



Fig. 2 (case 1).—Pelvis normal except for increased area of bone absorption, the lower half of the right sacro-iliac joint on the iliac surface, Feb. 1, 1932.



Fig. 3 (case 1).—Area of resection of the iliac portion of right sacro-iliac joint, permitting free drainage of abscess involving iliacus muscle, March 7, 1932.

or sacrum is to be anticipated. Because of the deep location of the sacro-iliac joint and the thick soft tissue covering of this region of the pelvis, diagnosis is difficult and is usually not made until after the infection has extended beyond the confines of the joint and involved the pelvis, the buttock, the hip and even the thigh. Statistics relative to such infections are few, but those found in the literature all verify the severity of the infection of the sacro-iliac joint and point to a high mortality as well as a high morbidity. It is obvious, therefore, that such infections should be recognized early and treated in such a manner as to prevent extension into the ilium and into the fascial planes of the pelvis.

Although pneumococcic infections of the major joints are rather uncommon, many are reported, most frequently complicating pneumonic processes. In a review of the literature since 1860, no case of pneumococcic infection of the sacro-iliac joint was found.

temperature was 99.8; pulse, 88; respiration rate, 22. The blood count, made January 20, showed: erythrocytes, 3,590,000; leukocytes, 26,850, and hemoglobin, 65 per cent. Vaginal examination revealed an exudate in both broad ligaments, and a diagnosis of postabortion pelvic cellulitis was made. Because of the pain in the region of the right buttock and leg, orthopedic consultation was requested.

January 20, the patient was still complaining of pain in the region of the right buttock, with some radiation down the posterior aspect of the right thigh. Motion of both hips, knees and ankles was normal. There was no local tenderness except over the general region of the right buttock and to some degree over the posterior aspect of the right sacro-iliac joint. The circumference of the thighs, knees and calves were equal on the two sides. Reflexes were normal. Lateral compression of the iliac crests caused excruciating pain in the region of the right sacro-iliac joint. On repetition of this test, no pain was referred to this area. There was a general lack of flexibility involving the entire lumbar spine, of a protective nature. Roentgenograms were ordered. The patient was placed on a fracture bed with traction to the right leg, the foot of the bed being elevated. Local heat was applied to the posterior aspect of the right hip and buttock. This resulted in considerable relief of the discomfort. Roentgenograms showed some thinning of the right sacro-iliac joint space and some lack of bone

1. Ferguson, R. S.; Downes, H. R.; Ellis, E., and Nicholson, M. E.: Preliminary Note on New Method of Differentiating the Testicular Tumors by Biologic Means, *Am. J. Cancer* 15:835-843 (April) 1931. Ferguson, R. S.: Case of Teratoma Testis: Clinical Application of Biologic Assay of the Urine for Prolan A, *S. Clin. North America* 13:483-487 (April) 1933.

definition of the right sacro-iliac joint. There was no fullness or induration suggesting local reaction to infection.

January 22, an exploratory needle was inserted into the inferior aspect of the right sacro-iliac joint, through the upper medial portion of the right buttock. Thick, greenish yellow pus was obtained and flowed freely from the exploratory

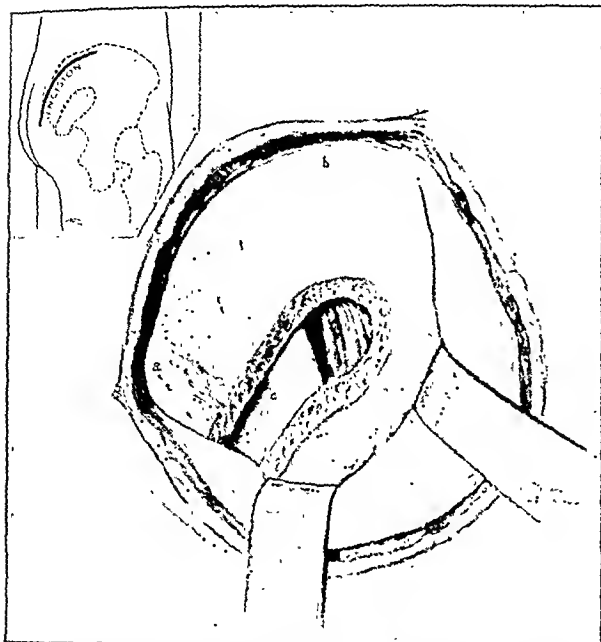


Fig. 4.—Operation for radical drainage of the right sacro-iliac joint: a, posterior superior spine of ilium; b, ilium; c, sacrum.

needle. The needle was kept in situ and used as a guide for an incision, which was made through the fibers of the gluteus maximus muscle, exposing the lower portion of the right sacro-iliac joint. About 1 ounce of pus was released. The joint was explored with a blunt instrument and a drainage tube was sutured in place. The wound was packed with petrolatum gauze. Cultures from the pus obtained revealed pure culture of pneumococcus, this being identified by subcultures. The patient's temperature fluctuated from 100 to 102, and her pulse remained about 120. During the next ten days, the drainage was profuse. The patient felt very comfortable except for tenderness of the wound. Her temperature remained elevated, varying from 100 to 103 F. Ten days following its insertion, the drainage tube was removed.

January 28, it was noticed that a smooth mass was palpable in the right iliac fossa and that the iliac glands on the right side remained large and tender. Vaginal examination by Dr. Jones revealed no change in the pelvis suggestive of a residual exudate. The temperature remained elevated and, as it was not compatible with complete drainage of the right sacro-iliac joint, the sinus tract was probed, January 31, and some serosanguineous discharge was obtained. At this time, restriction of internal rotation of the right hip was noted and a semifluctuant mass was felt in the region of the lower right quadrant, extending above the crest of the ilium in the general region of the psoas muscle. The mass was still present in the right iliac region, February 3, and on bimanual palpation suggested an abscess. Two days later, posterior drainage of this iliac abscess was done. An incision was made over the margin of the posterior aspect of the right iliac crest. The lateral surface of the ilium was exposed by subperiosteal dissection of the outer surface of the ilium to the margin of the right sciatic notch. A block

of bone, 4 by 6 cm., was removed from the ilium, including the lower two thirds of the iliac portion of the right sacro-iliac joint (figs. 3 and 4). As this bone block was elevated from its position in the ilium, about 6 ounces of pus coming from the various portions of the iliacus muscle filled the wound. The incision through the ilium was extended anteriorly and laterally, and the drainage tube was inserted deep into the iliacus muscle. The wound was then packed with petrolatum gauze, without suture. The discharge from his area was profuse and persistently showed pneumococcus organisms. Ten days after this radical drainage, the patient's temperature was normal, and she was very comfortable except for tenderness at the site of the incision. The drainage tubes were removed on February 23, and the wound was packed with petrolatum. By March 4, the discharge had ceased and the patient was very comfortable, with a normal temperature. At this time the sinus was probed and no exposed bone could be felt. This sinus tract was permitted to close gradually.

The patient was allowed up on crutches, March 30. Her general condition was very satisfactory. As the sinus tract was healing very rapidly, she was discharged home, April 1. She has been seen regularly since that time in the dispensary. May 27, she was walking without crutches and without a limp; there was no tenderness in the region of the right sacro-iliac joint. The incision had closed completely and firmly. Roentgenograms showed partial closure of the opening through the right ilium in the region of the sacro-iliac joint. The patient was examined in January, 1933. The wound was firm and the scar well healed. There was no evidence of inflammatory reaction, no pain in the region of the sacro-iliac joint, and no lack of function about the right hip. There was no limp and not the slightest interference with the function involving the pelvis or the lower spine.

In this case I have not had an opportunity to establish any direct connection between the endometritis and the pneumococcic involvement of the sacro-iliac joint. Cultures of the cervical discharge were not obtained. There are, however, several cases in the literature pointing to pneumococcic infections of the uterus.

CASE 2.—L. B., a white woman, aged 28, married and in the eighth month of her second pregnancy, was admitted to St. Luke's Hospital in the obstetric service of Dr. James A. Gough,

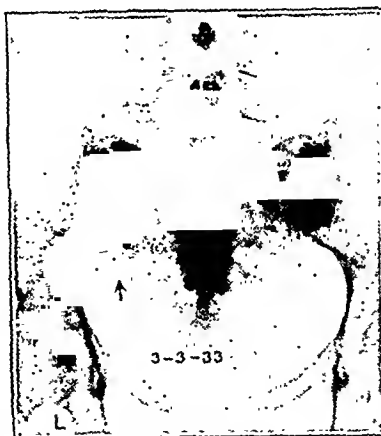


Fig. 5 (case 2).—An area of bone destruction involving the lower portion of the left sacro-iliac joint, March 3, 1933.



Fig. 6 (case 2).—Area of left ilium excised, March 31, 1933. The roentgenogram has been retouched.

Feb. 18, 1933. She had been in excellent health until about two months prior to admission, when she had a succession of severe colds, resulting in an acute infection of the left antrum. This had been irrigated for four or five days, when the patient began to complain of a dull pain in the lower part of the buttock on the left side. The pain was constant and of increasing severity. No history of injury, strain or radiation of pain was obtained. Laboratory examinations on admission, February 18, showed: red blood count, 3,980,000; hemoglobin, 70 per

cent; white blood count, 21,000; blood pressure, 124 systolic; 72 diastolic. Her obstetric condition was normal in every respect other than for the acute infection of the left antrum and her complaint of pain in the left buttock.

I saw the patient in consultation, February 20. Examination revealed tenderness over the left buttock and posterior portion of the left ilium with a maximum point of tenderness at the upper border of the sciatic notch. No swelling or induration was present. Motion of the hip was free in all directions and was not painful except in the extremes of motion. The sciatic area of the thigh was not tender. Lateral compression of the iliac crests caused severe pain in the posterior buttock on the left. Abduction, rotation and longitudinal pressure of the right thigh resulted in increased discomfort in the left buttock.

February 20, the red blood count was 3,540,000; hemoglobin, 65 per cent; white blood count, 12,000; temperature, 99.6.

A diagnosis of probable acute infection of the left sacro-iliac joint was made. The patient was placed on a fracture bed with traction to the left leg. This gave considerable relief. The acute sinus infection, which was being irrigated daily, seemed sufficient to account for the slight elevation of temperature and the leukocyte reaction. Roentgenograms of the pelvis failed to reveal pathologic changes in the region of the sacro-iliac joint because of the overlying fetal head. As ten-

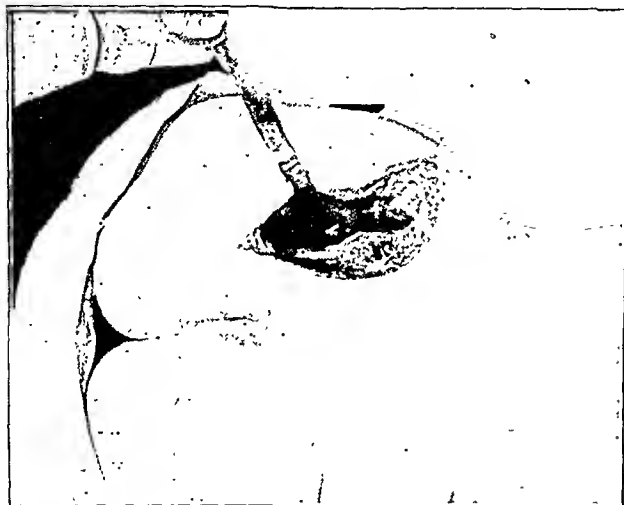


Fig. 7 (case 2).—Incision for radical drainage of left sacro-iliac joint.

derness persisted over the left sciatic notch, this area was aspirated, February 27, without any positive results being obtained. Labor began and the patient was delivered without difficulty by Dr. Gough.

A moderate secondary anemia continued as well as a leukocytic reaction of from 12,000 to 14,000.

March 3, an abscess of the left pharynx was opened. Cultures revealed a heavy growth of *Micrococcus catarrhalis*, *Streptococcus hemolyticus*, and *Streptococcus viridans*. Blood culture was negative.

March 3, roentgenograms of the pelvis showed definite evidence of a destructive process involving the sacro-iliac joint on the left side, especially the lower half. These conditions were more pronounced on the iliac side than on the sacral side of the joint. A definite area of bone destruction was present.

Because of the presence of acute infection of the sinus and pharynx, and the early puerperium, drainage of the sacro-iliac joint was delayed. Pain on compression of the iliac crests and referred symptoms on manipulation of the right leg had disappeared.

A rectal examination revealed a small abscess anterior to the left sacro-iliac joint.

March 9, operation was done, with radical drainage of the left sacro-iliac joint. An incision was made along the posterior half of the iliac crest to a point distal to the posterior superior spine. The posterior ilium was exposed by subperiosteal dissection to the level of the sciatic notch. An abscess

overlying the sacrum and region of the ilium adjacent to the sciatic notch was encountered. A large block of ilium including the lower two thirds of the iliac side of the sacro-iliac joint was then removed, and this opening extended anteriorly. About 8 ounces of thick yellow pus was liberated from within the pelvis. Large tube drains reaching to the abscess cavity within the pelvis were placed, and the wound was packed with paraffin gauze. Cultures from the pelvic abscess showed a heavy growth of pneumococcus, when grown under partial anaerobic conditions.

Drainage from the incision was profuse for five days. One drainage tube was removed on the fifth day after operation. The remaining tube was removed four days later. The paraffin pack has been changed every fourth or fifth day, care being used to prevent closure of the superficial portion of the wound. All areas of exposed ilium and sacrum were covered with healthy granulations two weeks following operation. A small amount of purulent discharge continued for several days. The depths of the wound closed in rapidly.

At this time the patient's general condition is excellent. There is no evidence of pelvic abscess or residual infection of the ilium or sacrum. The superficial wound is healing rapidly.

In this case the series of infections complicating pregnancy is most unusual. No direct relation between the sinus infection and the involvement of the sacro-iliac joint has been established, cultures yielding different organisms from these areas.

SUMMARY

Two cases of pneumococcic infection of the sacro-iliac joint complicating pregnancy were treated by radical resection of the ilium. One resulted in a complete cure one year after operation; there is satisfactory progress to date in the other case.

180 North Michigan Avenue.

TESTICULAR FIXATION IN TORSION OF THE SPERMATIC CORD

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AND

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Although torsion of the spermatic cord unquestionably occurs more frequently than the reported cases indicate, and although it results in the loss of the affected testicle in 80 per cent of cases, very little emphasis has been laid on operative effort to save the affected testicle, when possible, or, more particularly, the prevention of torsion on the remaining side.

The symptoms and signs of cord torsion have been so adequately described in the literature of the past decade that they are by now familiar to every one. We propose, therefore, to confine ourselves to a brief discussion of some phase of its etiology and to submit a plan of operative treatment that is designed to save a small percentage of involved testicles, i. e., those in which reduction of the torsion has been attained before necrosis occurs, and especially to remove the possibility of its occurrence on the opposite side.

There are two fundamental conditions which numerous observers, Campbell,¹ Colby² and others, hold to be basically responsible for the occurrence of torsion: a voluminous scrotum and a mobile testicle.

1. Campbell, M. F.: Surg. Gynec. & Obst. 44: 311 (March) 1927; J. Urol. 24: 22 (Jan.) 1928.
2. Colby, F. H.: New England J. Med. 203: 16 (July 3) 1930.

The first of these has received relatively scant attention—less, we believe, than its importance warrants—and, in the operation presented here, appropriate steps have been taken to correct it.

Hypermobility of the testicle is the result of insecure fixation due largely to one or more developmental defects. Roche³ asserts that 50 per cent of instances of torsion occur in incompletely descended testicles, and that a great many such testicles show inversion. He maintains that the reason for this is that inversion represents a purposeful effort by nature to place the testicle in the scrotum, in spite of an abnormally short cord, even if it must be there upside down. The result of this is that it hangs free in the tunica vaginalis, attached only at the superior pole, and is unbound on its posterior aspect by the mesorchium which it should have. He supports this theory by pointing out that a solid egg-shaped object will rotate freely if suspended by a cord from its upper pole, but, if hung by two cords, one at the upper and one at the lower pole, its mobility is greatly diminished. Therefore, Roche says, "torsion may be regarded as the result of muscular action on an abnormally mobile testicle, this abnormal mobility having a close developmental relation to imperfections in its descent."

This theory is a logical one and readily acceptable in those instances of torsion in which there is incomplete descent of the testicle, with inversion; but many a fully descended testicle suffers from torsion of its cord, and the prevalent opinion is that this is allowed to occur because of hypermobility, due either to an abnormally lax mesorchium or to a redundant gubernaculum, in addition to a voluminous scrotum. Be that as it may, hypermobility, whatever its cause in any individual case, is undoubtedly the principal factor predisposing to torsion. In our case it was obvious that the hypermobility of the testicle was due to a redundant scrotal sac, in addition to an extremely long spermatic cord. Furthermore, it was noted that this condition was present also on the unaffected side. This we believe to be highly significant, when considering any form of treatment, since hypermobility, whatever the cause may be, is developmental rather than acquired and is therefore probably more often bilateral than has hitherto been suspected.

Since the literature on this subject demonstrates that almost every case of torsion eventually terminates in orchidectomy, the significance and importance of this fact become at once apparent. The case reported by Walker,⁴ in which orchidectomy had to be performed on a patient with an atrophied testicle on the opposite side, presumably, from the history, as the result of previous torsion, is evidence that, in any plan of treatment, the unaffected side should be carefully examined and, if found to be abnormal, some form of prophylactic surgery should be seriously considered. The following case is illustrative:

History.—C. B., a boy, aged 9 years, entered St. Joseph's Hospital, Willimantic, Jan. 17, 1933, complaining of pain in the left scrotum. The family and past histories were essentially unimportant. The present illness began eight days before admission. While running to school, he was seized with violent pain in the left scrotum, which was followed by nausea and vomiting. He was carried to a physician's office very soon afterward, where he continued to vomit and to have excruciating pain. During the examination of the scrotum, the pain suddenly disappeared and the vomiting ceased. In the sub-

sequent week he remained perfectly well, having no pain or discomfort in the scrotum. Eight days later, however, while sitting at his desk in school, he was seized again with the same severe pain, which was again accompanied by nausea, vomiting and chilly sensations, and a few hours later he was admitted to the hospital.

Examination.—At the office during the first attack the patient was in more or less shock. He was pale, the skin was cold and clammy, and his facial expression indicated great distress. Examination of the left scrotum showed a tender mass, which on palpation felt like an acutely inflamed epididymis. While this mass was being examined, it suddenly disappeared and the patient's general condition improved almost instantly.

Physical examination at the hospital showed that the patient was well nourished. He gave an intelligent history. He was pale and rather cold. The pupils were equal and regular and

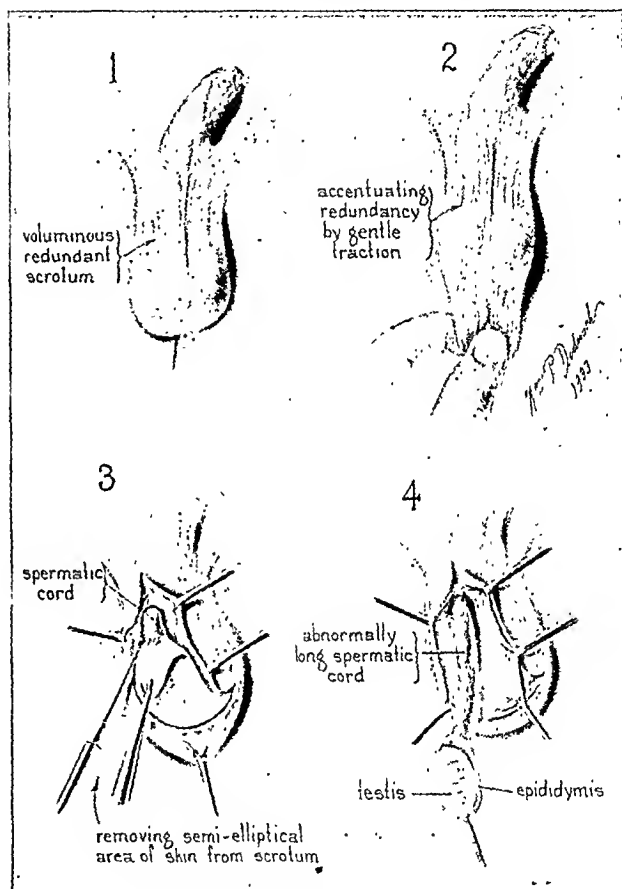


Fig. 1.—Initial steps in second operation.

reacted to light. The sclerae were clear. The teeth were good and the tonsils had been removed. The tongue was moist and not coated. There was no general adenopathy, and the thyroid was not enlarged. The heart was not enlarged and there were no murmurs. The lungs were clear and resonant. The abdomen was normal. There was no evidence of any hernias. The scrotum was voluminous on both sides. In the left side of the scrotum there was a marked increase in the tension of the left testicle, and a tender mass the size of a walnut was present in the region of the epididymis. The right testicle seemed normal except that it was unusually mobile, apparently from a long spermatic cord. The length of the cord on the left side was not determined because of marked tenderness present.

A diagnosis of torsion of the spermatic cord was made, but operation was deferred. Over night the scrotum became very edematous, although the pain had subsided considerably. Operation was therefore decided on.

Operation.—January 15, under light ether anesthesia, through a small inguinal incision, an orchidectomy was performed. The

3. Roche, A. E.: Clin. J. 57: 577 (Dec. 5), 589 (Dec. 12) 1928.

4. Walker, Kenneth: Brit. J. Urol. 3: 436 (Dec.) 1931.

testicle and epididymis were a dark purple. A definite point of torsion above the epididymis could be made out (fig. 3). The spermatic cord seemed unusually redundant above the constricting area. The cord structures were ligated and the wound was closed with interrupted catgut and silk.

Convalescence was uneventful and the patient was discharged from the hospital, January 26.

Because of the demonstrable redundancy of the scrotum and the unusual length of the spermatic cord on the opposite

The sutures on each side of the epididymis were tied and the testicle was thereby anchored firmly in the scrotum, pointing anteriorly, as it is in the normal position. These sutures were so placed that they did not in any way constrict the epididymis or vas (3, fig. 2). The wound was then closed with interrupted sutures of catgut to the dartos and of fine silk to the skin, and when this was done the testicle fit snugly in the scrotum because of the partial ablation. The patient's condition at the end of operation was satisfactory.

The patient was discharged from the hospital ten days later in good condition.

COMMENT

Fixation of the testicle in the scrotum has been done previously several times by various men. Keyes⁵ reports having anchored the testicle in the base of the scrotum in several cases; he believed that absence or redundancy of the gubernaculum was the prime factor in torsion of the spermatic cord. Campbell operated on the uninvolved side five times in fifteen cases, and says: "The mate of an involved scrotally contained testicle is often found to possess abnormal mobility," and Roche advises an operation essentially similar to the one performed here but does not cite an instance of having done it.

This fixation operation combined with partial scrotal ablation, when indicated, seems to us to be surgically sound. Its technic is very simple, and potential dangers are practically nonexistent. Its chief benefit is that it frees the patient from the possibility of torsion of the spermatic cord to the only testicle he possesses, and it is recommended in all cases in which hypermobility can be demonstrated in the uninvolved testicle, when torsion of the cord has occurred on the opposite side.

In addition, this case, as well as others cited in the literature, shows that torsion can occur and then disappear, either spontaneously or by manipulation, in a relatively few minutes. Since recurrence, however, is almost inevitable, we believe that in these cases, if seen

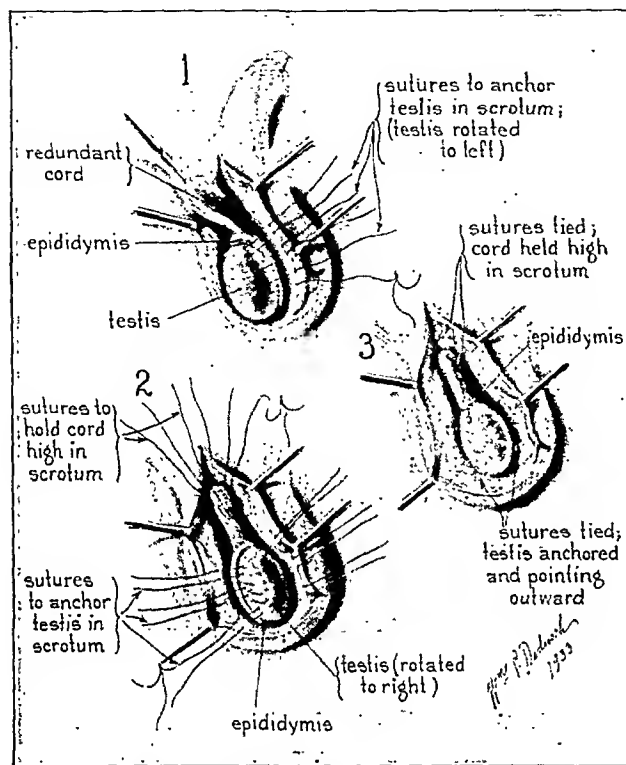


Fig. 2.—Further details of second operation.

side, we felt that some step should be taken to prevent torsion on this side, thus endangering the loss of the only remaining testicle. Accordingly, the patient was readmitted to the hospital, February 13, and operation was performed, February 16.

Second Operation.—Under gas-oxygen-ether anesthesia, a semielliptic incision was made in the right scrotum, beginning just below the external inguinal ring on the lateral aspect of the scrotum as far as the base. It then curved medially and was extended almost to the midline, and at this point upward and slightly lateral to the point of its starting (3, fig. 1). This incision was carried through the entire thickness of the scrotal wall, exposing the spermatic cord and testicle. The scrotal wall encompassed by this incision was then excised.

The testicle was readily delivered and found to be normal in size, shape and consistency. The epididymis was normal, as was the spermatic cord, except that the cord was redundant and very much longer than normal (4, fig. 1). The visceral tunica vaginalis was opened and everted, and the cut edges were sutured behind the epididymis.

The spermatic cord was pushed well up into the inguinal canal until there was no redundancy of it in the scrotum and was anchored there by three interrupted mattress sutures of fine silk (2, fig. 2).

The testicle was rotated laterally, and mattress sutures of fine silk were placed in the capsule of the testicle about 0.5 cm. in front of the epididymis, and in the medium septum of the scrotum (1, fig. 2). These sutures were left untied for the moment. The testicle was rotated medially, and similar sutures were placed, involving the lateral wall of the scrotum and the lateral aspect of the capsule of the testicle, again about 0.5 cm. in front of the epididymis (2, fig. 2).

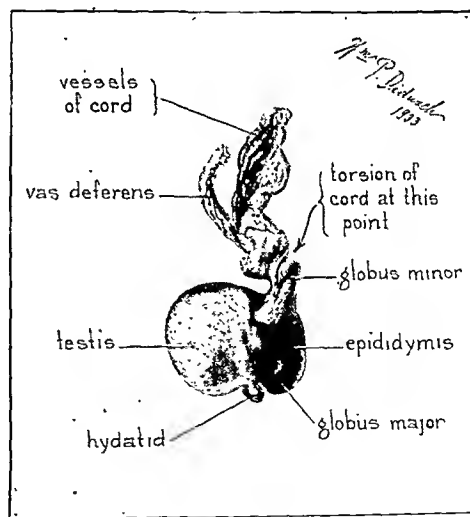


Fig. 3.—Point of torsion observed above epididymis.

very early, operation should be done immediately and fixation performed on both sides. Had this been done in our case immediately after the first attack of torsion, it is our belief that the testicle might have been spared. If the case is seen later, however, after the testicle has become gangrenous and the scrotum edematous, orch-

5. Keyes, E. L., Jr.; Collings, C. W., and Campbell, M. F.: J. Urol. 9: 519 (June) 1923.

dectomy must be resorted to, and at the same time the uninvolved side should be operated on, if it presents any of the anomalous conditions known to predispose to torsion of the cord.

29 North Street—179 Allyn Street.

Clinical Notes, Suggestions and New Instruments

REMOVAL OF SLENDER FOREIGN BODIES FROM THE STOMACH AND DUODENUM WITHOUT GASTROTOMY OR DUODENOTOMY

PAUL W. GREELEY, M.D., WINNETKA, ILL.

Recently two articles¹ have appeared in THE JOURNAL concerning the removal of foreign bodies from the stomach and duodenum. The methods described were very similar and, while not claimed to be original, are not often used and deserve further mention so as to emphasize the value of this type of procedure.

Briefly, the treatment consists in the passage of a catheter or small stomach tube through the mouth down into the stomach. Through an abdominal incision, the stomach is exposed and the foreign body "milked" into the tube. The tube is then withdrawn, taking the foreign body with it. The abdomen is then closed without the necessity of opening any hollow viscera.

This method is chiefly applicable to slender objects such as "Bobby Pins," hairpins and safety pins. An open safety pin can be closed by pressure through the stomach wall and converted into a slender body. A slight variation to this procedure was described by Huff² in 1930. A small piece of gauze is sewed into the eye of the rubber tube before it is passed into the stomach. The foreign body in his case was an open safety pin. This pin was fastened into the gauze and closed by palpation through the stomach wall. The tube and pin were then slowly withdrawn.

A modification of the procedure is given by Dudko and Brailowski.³ They describe a case of a 15 year old girl who swallowed a small nail. The nail became lodged in the duodenum. A duodenal tube was passed under roentgenologic control. Air was then blown into the duodenum and the nail finally dislodged, after which it was passed by way of the rectum four days later. They believe that the dilation of the duodenum by the instilled air was responsible in part for the final passage of the foreign body.

There may also be found in the literature several other removals by similar procedures.⁴ These successful attempts have either been forgotten or passed by unnoticed, and it would seem timely to refer to them here.

I have operated on two patients with a foreign body in the stomach. The first was an open safety pin in the stomach of a 3 year old boy. Three weeks before the operation, the patient told his mother that he had swallowed a pin. He was immediately taken to his physician and a flat roentgenogram was taken of the abdomen. An open safety pin was easily demonstrated near the pyloric end of the stomach. The boy was fed a diet consisting chiefly of large quantities of cabbage, green beans and celery, such as has been described by Sauer.⁵ A fluoroscopic check was made several times during the following three weeks but the pin was always found to be in the same position. Fearing that further complications such as perforation and peritonitis might arise, I thought it advisable to remove the pin by surgical intervention. In this case, I followed the

plan suggested by Huff. Under ether anesthesia, a left upper paramedian abdominal incision was made. The point of the pin could be palpated in the duodenum, and the head was apparently caught behind the pyloric sphincter. The pin was worked back into the stomach. A small size stomach tube into the eye of which a piece of gauze had previously been sewed was then passed. The pin was fastened to the end of the gauze and closed by palpation through the anterior stomach wall. The tube and pin were gently withdrawn, after which the stomach was returned to the abdomen and the wound closed by layers. The child made an uneventful recovery and to date, nearly two years since the operation, has been perfectly well.

The second patient was operated on, Aug. 18, 1932. A 2 year old girl was seen by her mother holding an ordinary hairpin. The mother turned her back for an instant, and when she came to take the pin away from the child the pin could not be found. Being alarmed and fearing that the child might have swallowed it, she consulted her physician, who advised fluoroscopic examination of the abdomen. Such a study revealed a small, thin hairpin in the pyloric end of the stomach, with prongs separated about 1 inch. After one month of conservative treatment with a bulky diet, the pin had not moved. It seemed better judgment to remove the pin than to run further risk of possible perforation. Under drop ether anesthesia, the abdomen was opened through an upper left paramedian incision. The stomach was delivered from the abdominal cavity and the pin palpated in the pyloric end with the prongs pointing distally. A number 24 F. rubber catheter was then passed by the anesthetist through the esophagus into the stomach, and the blunt end of the hairpin was passed into the eye of the tube by palpation through the anterior stomach wall. By gentle manipulation, the pin was then easily "milked" all the way into the catheter. The tube was withdrawn, taking the hairpin out with it. The stomach was returned to the abdominal cavity, and the wound closed by layers. The child made an uneventful recovery.

CONCLUSIONS

1. A method of surgical removal of slender foreign bodies from the stomach, which is here discussed, is especially valuable in children because it does not bring about the same potential dangers incident to opening a hollow organ.

2. Although no actual record could be found, the method should also be applicable to adults.

3. This treatment in no way alters the already established indications for surgical removal of foreign bodies from the stomach and duodenum.

545 Lincoln Avenue.

PRIMARY HEMANGIO-ENDOTHELIO-SARCOMA OF THE LIVER

CHARLES S. WHITE, M.D., WASHINGTON, D. C.

The infrequency of hemangio-endothelioma of the liver probably warrants reporting such a case, but its recognition as a medical entity is almost impossible and consequently detracts from its clinical interest.

There seems to have been some confusion in the classification of several types of sarcomas and angiomas of the liver, although there is a great similarity in the microscopic picture. One gets the impression from the various pathologic descriptions that probably all have their origin in the walls of the liver capillaries, with great proliferation of endothelial cells and even the formation of many new blood vessels. The cells are morphologically sarcomatous in type and must be considered malignant, although in many of the cases no metastases were found, possibly because of the early death of the patient. In some of the cases reported more recently, metastases were found in the lungs, pancreas and retroperitoneal glands. The tumors have been termed angiomas, hemangiomas, endotheliomas, sarcomas, and various combinations of these. Foote¹ has dis-

From the Department of Surgery, George Washington University School of Medicine.

Read before the Section of Neoplastic Diseases, Medical Society of the District of Columbia, Feb. 10, 1933.

1. Foote, John: Hemangio-Endothelioma of the Liver in the Infant, and So-Called Angiosarcoma, in Osler, William: Contributions to Medical and Biologic Research, New York 11: 935-941, 1919.

1. Raymond, S. W.: Foreign Body in Duodenum: Report of a Case and Method of Removal, J. A. M. A. 100: 337 (Feb. 4) 1933. Otten, Harry: Open Safety Pin in the Stomach of a Two Months Old Baby, *ibid.* 100: 736 (March 11) 1933.

2. Huff, W. B.: Removal of a Safety Pin from the Stomach Without Gastrotomy, J. A. M. A. 94: 1655-1656 (May 24) 1930.

3. Dudko, M. O., and Brailowski, B. S.: Removal of Foreign Body from Duodenum with Aid of Duodenal Sound, Zentralbl. f. Chir. 57: 1476-1478 (June 14) 1930.

4. Monteth, W. B. R.: Removal of a Foreign Body from the Stomach of an Infant, Brit. M. J. 1: 259 (Feb. 18) 1928.

5. Sauer, L. W.: Dr. Boer's Nonsurgical Treatment for Swallowed Foreign Bodies, J. A. M. A. 98: 1981 (June 4) 1932.

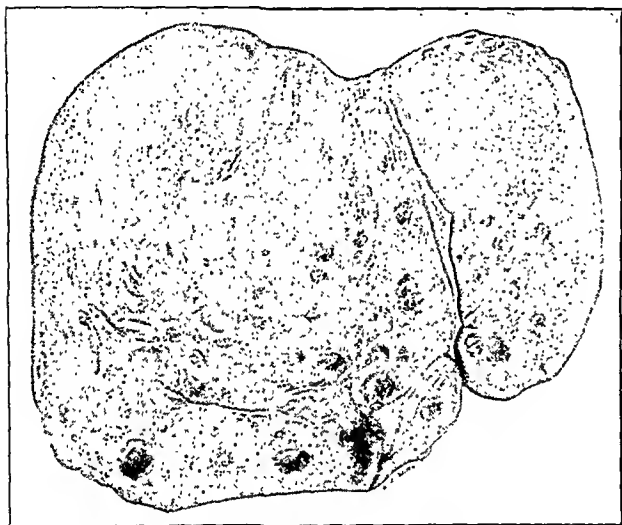
nated them, I think logically, as hemangio-endotheliosarcoma. In none of the cases was a correct preoperative diagnosis made; no patient survived.

The following case came under my observation:

History.—Mrs. A. D., aged 31, married, the mother of three children, was admitted to George Washington University Hospital, Aug. 23, 1932, as the private patient of Dr. Purse. Her complaint was pain in the upper right quadrant of the abdomen. The family history was unimportant except that the mother had chronic pulmonary tuberculosis.

For the past six or eight months the patient had complained of feeling tired and had pain high in her back, between the scapulae, and had not been ill enough to seek medical aid. The loss of weight had been moderate. One week prior to admission, the patient had four attacks of severe abdominal pain, of a paroxysmal character, radiating to the right shoulder, and not attended with nausea or vomiting. On admission to the hospital, she did not appear acutely ill but seemed pale and exhausted.

Examination.—The physical examination at the time revealed no gross pathologic condition in the chest. The temperature was 101.4 F.; pulse, 104, and respiration rate, 20. The liver was palpable well below the costal border but was not tender. The patient was poorly nourished but not emaciated, pale but



Primary hemangio-endotheliosarcoma of the liver.

not jaundiced. The laboratory examinations made within two days after admission were as follows: red blood cells, 1,950,000; hemoglobin, 28 per cent; white blood cells, 10,200; segmented forms, 75; band forms, 3; juveniles, 1; basophils, 1; monocytes, 1; lymphocytes, 19.

The urine showed a faint trace of albumin and occasional hyaline and granular casts.

The cholecystographic examination by the oral method showed that none of the dye entered the gallbladder, and a large shadow seen was thought to be the right kidney or a gallbladder filled with fluid.

The patient appeared to be losing ground rapidly, coincidentally with the rapid increase in the size of the liver. She was operated on, August 26, three days after admission. I was unable to make a diagnosis that was consistent with the symptoms.

Operation.—Through a right rectus incision the liver was immediately visualized, and the operator was impressed by its increase in size and the presence of a number of purplish nodules, varying in size from about 1 cm. to 4 or 5 cm. in diameter. These growths were firm and distinctive to the palpating fingers. On section, they bled freely and did not look unlike a black raspberry. A tentative diagnosis of sarcoma was made, and the pathologist was called for a biopsy. Dr. Choisser made a diagnosis of metastasizing hemangioma while viewing the growth in vivo. The subsequent frozen section

microscopic diagnosis was hemangiosarcoma. The final report on paraffin section later was as follows:

"Grossly, the specimen consists of a small dark red irregular nodule removed from the surface of the liver. It is 1 cm. long, 0.75 cm. wide and 0.75 cm. in thickness. Its surface is glistening and on cut section it shows the presence of a recent dark red clot, which can be displaced on slight pressure. Microscopic sections show the specimen to be covered on two sides with a thin layer of liver tissue to which the Glisson capsule is firmly attached. A few centimeters from the surface, however, are seen large embryonic spindle shaped cells with hyperchromatic nuclei, many of which are in an active stage of mitosis. These cells appear in small nests or groups which tend to infiltrate the liver substance and also in long dendritic-like strands which surround immature blood vessels, which show the presence in some areas of early thrombosis and beginning organization. The tumor cells are of the sarcomatous type and are extremely active. The tumor is occasionally described as a metastasizing angioma, but from its structure and anatomic relationship, I am of the opinion that it is a definite hemangiosarcoma and highly malignant."

The gallbladder was distended and a drainage tube was placed in it for relief of pressure. A rather hasty exploration of the abdomen was done and several retroperitoneal glands were found enlarged. The patient lived about ten days longer.

Autopsy.—On the right side the liver extended below the crest of the ilium and on the left to the level of the first floating rib. The right lobe was markedly enlarged, mottled and literally studded with a fungating reddish yellow type of growth consisting of multiple nodules. These nodules projected from the liver and had no sunken centers; they were very vascular and bled easily. Section through the liver showed the tumor mass to be made up of locules containing dark venous blood. These locules were of various sizes and were peppered through the liver substance. Those that came to the surface bulged outward, in some cases, for about 0.5 cm. The liver was literally honeycombed with his growth.

The anatomic diagnosis, made by R. M. Choisser, was hemangiosarcoma of the liver with metastasis to the head of the pancreas, the retroperitoneal lymph nodes and the left lung.

This case neither points a moral nor adorns a tale. It does not present a group of clinical symptoms that offers any clue as to the underlying cause and could hardly form a basis for a rational diagnosis in similar cases. If one is left with any impression in this case, it is the enlargement of the liver, the acute and devastating anemia, and the progressive exhaustion of the patient.

Probably one of the best contributions to the subject was made by the late John Foote of this city, who collected eight cases up to 1919 and added one of his own. Foote believed the disease was one of infancy, as none of his patients lived beyond the first year of life. Spiegel² has since reported another case in a child. I have found three cases in adults since 1919. Foote has very properly suggested that the disease be termed hemangio-endotheliosarcoma, and pathologists endorse his sound deductions. He describes the disease in this way:

"Summing up the information gained from a study of these cases, we may define hemangio-endotheliosarcoma of the liver as a congenital disease manifesting itself by an enlargement of the liver and some digestive disturbances within three months after birth, and caused by rapid and unrestrained proliferation of the endothelium of the liver capillaries causing the formation of nodules on the surface of and within the liver and a rapid and progressive increase in the size of that organ with a fatal termination usually before the sixth month as a result of pressure and obliteration of liver tissue. Jaundice and ascites are not usually observed, and metastases are not found. The liver is purplish, and is studded with nodules varying in size from that of a millet seed to that of an egg, some of which are confluent. The nodules are lighter in color than the surrounding tissue, and are also seen throughout the liver in cut sections to be dark red in the center surrounded by a lighter colored ring."

Puhr,³ in a more recent paper, states that only twelve or thirteen certain cases have been reported and reports another

2. Spiegel, H. A.: Pedunculated Angio-Endothelioma of the Liver, Arch. Pediat. 46:188-192 (March) 1929.

3. Puhr, Ludwig: So-Called Primary Hemangio-Endothelioma of the Liver, Ztschr. f. Krebsforsch. 34:503-517, 1931.

in a man, aged 65, who had been complaining for six months but was seriously ill only two weeks. Jaundice was present. The liver weighed 2,800 Gm. and was studded with nodules of various sizes of bluish red, shading to dark gray. There was a secondary pancreatic involvement.

Bengolea and Velasco Suárez⁴ report a case in a woman, aged 22, in which the diagnosis of chorio-epithelioma was first made but later was found untenable because no tumor was present in the genital organs. The liver was easily palpable and a roentgen diagnosis of hydatid cyst was made. At operation the liver was found full of rounded red tumors. The histologic examination agreed with descriptions of angioplastic sarcoma of the French nomenclature.

Since Foote's paper in 1919, additional data, chiefly from the German literature, cast doubt on points emphasized by him. It is not necessarily a disease of childhood, and in at least three cases metastases were present. The fulminant type of the disease probably explains the failure to metastasize. The patients, in many instances, succumbed while the disease was still confined to the liver. Jaundice has been a variable symptom and its presence or absence, probably is a matter of the location of a lesion. If a nodule compresses the hepatic duct, one may expect jaundice.

The paucity of cases leaves much to be desired clinically, but pathologically the reports, if analyzed, show remarkable consistency and leave little doubt of the nature of the disease.

The recent utilization of thorium dioxide as a liver stain in roentgen studies suggests its use in this disease. In the case here reported it was felt that the illness of the patient forbade its use, especially when thorium dioxide sol has hardly passed its probationary period as a diagnostic agent. I entertain the hope that it will prove very helpful.

1801 Eye Street N.W.

ECTOPIC SPLEEN

ARTHUR W. HOAGLUND, M.D., MINNEAPOLIS

This case is deemed of interest for the three following reasons: First, it is one of true extraperitoneal spleen; second, the original diagnosis was wrong, and, third, a more accurate interpretation of the original complaint may have led to the correct diagnosis. The major symptoms were entirely relieved by removal of the tumor.

A woman, aged 57, appeared for examination complaining of pain in the right leg. General physical examination gave negative results. There was no swelling, circulatory change, tenderness or any sign of abnormality of the right leg or of the groin. Pelvic examination revealed a tumor which felt hard. It seemed to be fixed in the right broad ligament, to extend into the flare of the pelvis and to originate from the uterus. The diagnosis was intraligamentous fibroid tumor. At laparotomy it was found that the uterus and the adnexa were normal and that the hard mass lay outside the peritoneum in the lateral hollow of the pelvis. The peritoneum was resected back, and further exploration revealed the tumor to be pierced by the external iliac artery. It was deemed inadvisable to attempt further dissection from within the pelvis, and the abdomen was closed. One week later an incision was made in the groin, and extraperitoneal dissection of the growth was accomplished. It was firm and encapsulated, 5 inches (12.7 cm.) long and 3 inches (7.6 cm.) thick, about the shape of a kidney, with a small notchlike nubbins that had wrapped itself completely around the external iliac artery and the femoral nerve. As this nubbins was shelled out, a definite constriction was visualized about the artery, and the pulsation in the femoral artery was definitely increased. The tumor was examined by Dr. Bell, professor of pathology at the University of Minnesota, and was diagnosed as spleen.

The pain in the leg was immediately relieved and the patient made an uneventful recovery. She has had no recurrence of symptoms.

SUMMARY

An extraperitoneal pelvic tumor manifested itself only by pain in the leg.

An incorrect diagnosis of intraligamentous fibroid growth was made.

At operation it was found that the tumor was wrapped around the external iliac artery and the femoral nerve.

The patient obtained complete relief after removal of the growth.

The tumor proved to be an aberrant extraperitoneal spleen.

74 South Ninth Street.

POSSIBLE PHENOLPHTHALEIN POISONING

WALDO E. NELSON, M.D., CINCINNATI

Ocasional untoward results have been reported following the use of various proprietary laxatives that supposedly contain phenolphthalein as the active ingredient. In many instances the disturbance has been chronic in nature and has followed prolonged administration. Cleaves¹ reports a fatal instance in a boy, aged 10 years, apparently due to the ingestion of a proprietary laxative preparation. The following case, with central nervous involvement, is presented as possibly due to excessive ingestion of a proprietary laxative:

A white boy, aged 3 years, admitted to the Children's Hospital, Dec. 25, 1932, had been ill following a heavy meal, November 24. The physician in attendance at that time suspected that the child had "tuberculosis." According to the grandmother, the child was not acutely ill at this time and was not confined to bed. November 29, he chewed and swallowed a large number (probably nineteen) of "gum laxative tablets." Following this, there was for a period of two days profuse diarrhea, some of the stools containing blood. Subsequently the child was troubled with constipation, vomited frequently, and was drowsy and unable to stand.

At the time of admission to the Children's Hospital the boy was in a semicomatose state; a bilateral internal strabismus was present; the neck was rigid; there was a positive Kernig sign bilaterally; a distinct tache cérébrale was obtained; both patellar reflexes were hyperactive, and the Babinski reflex and ankle clonus were absent. There was no evidence of otitis media. The urine contained a trace of albumin as well as a few pus cells and granular casts. The urine was normal on reexamination six days later. The spinal fluid was clear and contained 50 cells per cubic millimeter. The hemoglobin was 7.5 Gm. per hundred cubic centimeters; the red cell count, 4,700,000 per cubic millimeter; the white count, 10,200, with 75 per cent neutrophils. The Wassermann reaction was negative, as was the tuberculin reaction with 1 mg. of tuberculin. Roentgenograms of the chest were negative. There was no evidence of lead poisoning discovered on the roentgenograms of the long bones, nor was there any lead line on the gums or stippling of the red cells.

At the time of admission the child presented the appearance of a chronic form of meningitis or meningo-encephalitis. Tuberculosis could not be considered as the etiologic factor in view of the negative tuberculin test, the failure to find evidence of tuberculosis on the roentgenograms, the absence of tubercle bacilli in the spinal fluid, and the subsequent course of the case.

Improvement was slow, neurologic symptoms gradually disappearing and mentality returning to normal. March 13, 1933, three and a half months after the onset of symptoms, examination revealed no evidence of neurologic involvement except a questionable facial weakness.

The symptoms presented may perhaps be accounted for on the basis of the possible harmful effect of the medication. However, the indefinite illness of a few days prior to the ingestion of the laxative might have been the etiologic factor in producing an encephalitis.

Although it is not proved that the laxative was the causative or even the contributing agent, the danger of marketing laxatives as candy or gum, which children may use as simple confections, makes it seem desirable to report the case.

Elland Avenue and Bethesda.

4. Bengolea, A. J., and Velasco Suárez; Carlos: Primary Angioplastic Sarcoma of the Liver: Histologic Study, Arch. argent. de enferm. d. ap. digest. y de la nutrición 7: 185-204 (Dec.-Jan.) 1931-1932.

From the Children's Hospital and the Department of Pediatrics, University of Cincinnati College of Medicine.
1. Cleaves, Montague: Poisoning by "Etlax" Tablets, J. A. M. A. 99: 654 (Aug. 20) 1932.

ABSCESS OF THE THYROID GLAND

ALLEN H. MOORE, M.D., DOYLESTOWN, PA.

Abscess of the thyroid gland is rarely primary; metastatic in character, it usually follows one of the acute infectious diseases, more commonly pneumonia, tonsillitis or cervical adenitis. In all the accounts, suppuration of the thyroid is considered rare, thyroiditis in general occurring in from 1 to 0.25 per cent in operative material and observed clinical cases.

There is no age at which the disease cannot be found. According to Miggend, women are more susceptible than men. Meara and MacGregor¹ reported a case in a 3½ year old child with a suppurating thyroid. Wilkins² reported a case occurring at the age of 74. The usual age of incidence is from 20 to 45 years.

When suppuration of the thyroid develops, the abscesses are as a rule multiple, each, however, tending to break through the adjoining soft tissues, thus leading to confluence and to rupture through the skin or purulent infiltration of the surrounding structures.

The common primary manifestations exhibited in abscess of the thyroid gland are signs of inflammation, redness, swelling and edema of the overlying tissues in the median line. Beilby³ believes that the pathognomonic sign is the stony hardness of the gland elicited on palpation; no other condition except carcinoma gives a similar feeling. The disease may be mistaken for a sarcoma, as in a case reported by Bonney,⁴ which was afterward found to be an abscess and opened. It may also be confused with glossitis, abscess at the base of the tongue, laryngitis, esophageal abscess and perichondritis of the larynx and neck muscles.

In many of the cases of thyroid abscess, limitation of elevation of the chin and depression of the chin on the sternum when swallowing are prominent signs. These two signs, I believe, are of great significance in the differentiation of the disease. They are brought about by the action of the sternohyoid, sternothyroid and omohyoid muscles on the abscess beneath them. One may easily perceive how pain may result from tightening of these muscles, and how tightening as the result of swallowing may be prevented by depression of the chin on the sternum.

The case that is the subject of the present report was noteworthy because of its indirect mode of onset, its apparent primary invasion, the failure in diagnosis and the fatal ending.

H. N. A., a youth, aged 20, a student at the National Farm School, admitted to the school infirmary in my service, at the time of admission complained of a subclavicular pain in the midclavicular line of the left side of the chest. On admission his temperature and pulse were normal. Since he was a member of the school football squad, it was first thought that he was suffering from a consequent injury. He stated frankly that he had not received an injury on the field or at any time during the routine of his usual work at the institution. His only complaint was that of pain in the left side of the chest. He had suffered from this pain for about ten days before being admitted to the school infirmary. There was a circumscribed area of tenderness 6 cm. in diameter exactly where he complained of pain. This area was slightly reddened and somewhat edematous. It was of a doughy consistency. There were a few crepitant râles audible at the apex of the left lung. There were no friction or other adventitious sounds. The right lung presented nothing abnormal.

The eyes evidenced a marked exophthalmos. The history revealed this as a congenital condition. The pupils were equal and reacted normally to light and in accommodation. There was no photophobia. The throat was dry and congested. The tonsils did not show any acute infection. There was no rigidity of the neck, nor was pain experienced while the head was in motion. The patellar reflex was normal. There was no Kernig and no Babinski reflex. The abdomen was soft, and the edge of the liver was easily palpable. The spleen was not palpable.

The day following admission to the Farm School Infirmary, the patient showed a marked change for the worse. The temperature was then 102 F. and the pulse 110. Blood pressure

was 118 systolic and 65 diastolic. The face was flushed and the patient showed definite signs of a rapidly oncoming toxemia. He was anxious and complained more of the pain in the left side of the chest. The area of tenderness extended to the clavicle. There was no redness, edema, fluctuation, pain or tenderness over the region of the thyroid gland. Pain could not be elicited even on deep pressure over the thyroid. The patient's condition grew progressively worse and he was later admitted to the Jewish Hospital in Philadelphia. On admission, his temperature had risen to 103.3 and the pulse to 120. He was very restless and toxic, and he complained of a sore throat and a severe headache. Later in the day there was a chill of considerable severity. The second day after admission the tenderness extended to the left side of the neck, rotation of the head causing exquisite pain. A lumbar puncture was negative. Roentgen examination of the chest and neck was negative.

There was a tentative diagnosis of superior mediastinitis of undetermined origin. The next symptom that appeared was vomiting. The pulse became still more rapid. Puncture of the chest, neck and thyroid gland failed to reveal the presence of pus. October 3, nearly two weeks after the onset of the disease, the swelling in the neck subsided slightly but the tenderness was still present. The temperature rose to 106.3 and the pulse to 170. The patient became cyanotic. The respirations were rapid and coma ensued, death following shortly after coma had supervened. A postmortem examination revealed a large, deep-seated abscess of the thyroid gland.

SUMMARY

1. The gradual onset of a subclavicular pain with an upward extension of the area of tenderness was unusual.
 2. The characteristic signs of inflammation with swelling in the midline of the neck in the region of the thyroid were not present until late in the progress of the disease.
 3. On account of the proximity of the cervical fascia and its relation to the mediastinum, early incision in such cases is most important for the preservation of life.
 4. The abscess was apparently of primary origin.
- 106 East State Street.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.
H. A. CARTER, Secretary.

**BURDICK DIATHERMY MACHINE
MODEL D-2 ACCEPTABLE**

The Burdick Corporation, Milton, Wis., submitted a model D-2 Diathermy Machine to the Council for investigation and report. The manufacturer claims that the unit provides sufficient capacity for full range medical and surgical diathermy practice commonly encountered in office and institution. The firm agrees to market the product in accordance with the Council's published statement, entitled "Diathermy: A Preliminary Statement to Acceptance of Diathermy Apparatus."

In the manufacturer's opinion, the Model D-2 Diathermy Machine produces sufficient electrical energy to provide heat for the treatment of the indications mentioned in the Handbook of Physical Therapy or other Council accepted medical literature. For surgical work, the concern claims that the Model D-2 Diathermy Machine generates enough electrical power for use in electrocoagulation of tonsils and in certain forms of surgery when indicated. The apparatus is arranged for the production of Oudin current, a high-frequency current of higher voltage than the high frequency currents used for ordinary diathermy treatments. Oudin current, the company writes, is recommended for desiccation.

The Burdick Diathermy Machine Model D-2 is mounted in a cabinet made of genuine walnut. The top frame is solid walnut and the remaining cabinet heavily veneered. The size of the diathermy unit proper is 23 inches wide, 16¾ inches deep and 11½ inches high at the top of the panel board. The spark gap assembly projects a few inches above. The unit may

1. Meara, F. S., and MacGregor, R. S.: Arch. Pediat. 23: 591 (Aug.) 1906.

2. Wilkins, A. G.: Brit. M. J. 2: 1005, 1904.

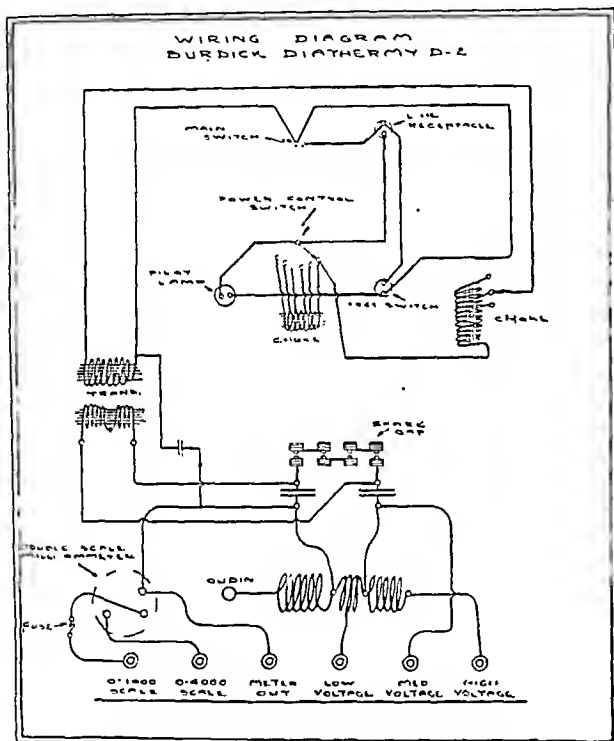
3. Beilby, G. E.: New York State J. Med. 19: 173 (July) 1919.

4. Bonney, C. W.: Lancet 2: 155 (July) 1911.

be mounted on a mobile stand or cabinet especially built for the purpose.

Three connections are provided to permit proper operation on any line voltage. The taps are marked 105, 115 and 125 volts. This provides for maximum output on low voltage line and also aids in protecting the apparatus against burnout on high voltage line. The device is designed to operate on 110-125 volt, 60 cycle alternating current. In case direct current is the only source, the physician is obliged to purchase a rectifier at an additional cost. The panel board is made of bakelite with gloss finish. Descriptive lettering is all hand engraved. All controls and switches are said to be located for maximum convenience. The Oudin current ball terminal is concealed to prevent contact with the operator's hand or arm. A foot switch receptacle is provided.

There is a six point power control operated by a specially designed positive stop switch. The position of the switch handle indicates the setting of power control even when the numbers are not readily visible to the operator from a distance.



Schematic diagram of electrical connections of Burdick Diathermy Machine Model D-2.

The spark gap is built with eight three-eighths inch tungsten points equipped with both master and individual gap controls. Turned solid metal radiators provide thermal conductivity. The spark gap is shielded with an ornamental guard.

The transformer is of the high voltage type, well insulated, and is said to be capable of prolonged operation without overheating. It produces 5,000 or more volts at full output. The condensers are built of mica and copper plates and built in special radiator type aluminum mountings. The resonator is grounded on bakelite grooved tubing. The patient circuit is grounded free from the line. The milliammeter is plug-in thermocouple type with protective fuse concealed by the meter. The upper scale reads from 0 to 6,000, the lower scale from 0 to 1,500. A pilot lamp with filtered light is provided. It shows red only when the current is on. All contacts or current carrying parts are concealed, thus tending to prevent accidental shock from the machine.

The accompanying diagram shows schematically the electrical connections of the apparatus.

The Council on Physical Therapy declares the Burdick Diathermy Machine Model D-2 eligible for inclusion in its list of accepted devices for one year.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ERYSIPELAS STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1933, p. 363).

Parke, Davis & Co., Detroit.

Erysipelas Streptococcus Antitoxin Refused and Concentrated—P. D. & Co. (See New and Nonofficial Remedies, 1933, p. 364).—Also marketed in packages of one piston syringe containing 20 cc.

SAL ETHYL CARBONATE.—The carbonic acid ester of ethyl salicylate.—Salicylic ethyl ester carbonate.— $O:C(OC_2H_5.COOC_2H_5)_2$.

Actions and Uses.—Sal-ethyl carbonate provides the antipyretic and analgesic effects of the salicylates. It is relatively insoluble in water and in the acid secretions of the stomach, whereby the disagreeable taste and local gastric symptoms of the soluble salicylates are practically avoided. For cases requiring a rapid analgesic and antipyretic effect rather than salicylate saturation, tablets sal-ethyl carbonate with amidopyrine are supplied.

Dosage.—Sal-ethyl carbonate and tablets sal-ethyl carbonate with amidopyrine may be given in dosages ranging from 0.3 to 1 Gm. (5 to 15 grains), three or four times daily, according to the individual requirements.

Manufactured by Parke, Davis & Co., Detroit. No U. S. patent. U. S. trademark 92,115.

Compressed Tablets Sal-Ethyl Carbonate 5 gms.

Compressed Tablets Sal-Ethyl Carbonate with Amidopyrine: Each tablet contains sal-ethyl carbonate 0.23 Gm. (3½ grains) and amidopyrine 0.1 Gm. (1½ grains).

Tablet Triturates Sal-Ethyl Carbonate 1 gr.

Sal-ethyl carbonate occurs as white, odorless and tasteless crystals. It is almost insoluble in water and diluted hydrochloric acid. It is slightly soluble in ether and alcohol but readily soluble in chloroform and acetone. It melts between 96 and 99 C.

Transfer about 2 Gm. of sal-ethyl carbonate to a test tube, add 5 cc. of half normal alcoholic potassium hydroxide and heat on the steam bath for five minutes; the product dissolves, followed by the formation of a precipitate; cool, decant the supernatant liquid, add 6 per cent acetic acid to the precipitate; it effervesces; add an equal volume of water to the decanted liquid; a colorless oil separates that has the odor of ethyl salicylate. Transfer about 1 Gm. of sal-ethyl carbonate to an Erlenmeyer flask, add 20 cc. of normal sodium hydroxide, 20 cc. of alcohol and boil under a reflux condenser for thirty minutes; cool, acidify the solution by addition of diluted sulphuric acid; extract the solution with 20 cc. of ether, filter the ether, evaporate to dryness; the residue responds to qualitative tests for salicylic acid.

Dissolve about 0.5 Gm. of sal-ethyl carbonate in 10 cc. of sulphuric acid: the solution remains colorless for five minutes (*readily carbonizable substances*). Transfer about 0.5 Gm. of sal-ethyl carbonate to a test tube, add 10 cc. of water and a few drops of ferric chloride solution: no blue color develops (*salicylic acid*).

Transfer about 1 Gm. of sal-ethyl carbonate, accurately weighed, to an Erlenmeyer flask, add 40 cc. of half-normal alcoholic potassium hydroxide, boil under a reflux condenser on the steam bath for three hours, wash the condenser and add the washings to the flask, remove the alcohol by evaporating to about one-third the volume, adding 50 cc. of water and evaporating to about 15 cc., transfer the solution to a 250 cc. volumetric flask, make up to volume by addition of water. Transfer a 25 cc. aliquot to an Erlenmeyer flask and test the solution according to the method for total salicylate described in the A. O. A. C. Manual, third edition, page 446, Iodine Method, paragraph 24: the weight of the tetraiodophenylene quinone multiplied by 0.5208 and by the aliquot factor is equivalent to not less than 98.5 per cent nor more than 100.5 per cent of the sample taken. Transfer about 1 Gm. of sal-ethyl carbonate, accurately weighed, to a tared weighing bottle; heat in an oven at 100 C. for one hour; cool in a desiccator and weigh: the loss in weight is not greater than 1 per cent. Transfer about 0.5 Gm. of sal-ethyl carbonate, accurately weighed, to a platinum dish and ignite: the ash is not more than 0.02 per cent.

PROCAINE-ABBOTT (See New and Nonofficial Remedies, 1933, p. 58).

The following dosage forms have been accepted:

Sterile Ampoules Procaine Hydrochloride Crystals For Spinal Anesthesia, 100 mg.

Sterile Ampoules Procaine Hydrochloride Crystals For Spinal Anesthesia, 120 mg.

Sterile Ampoules Procaine Hydrochloride Crystals For Spinal Anesthesia, 150 mg.

Sterile Ampoules Procaine Hydrochloride Crystals For Spinal Anesthesia, 200 mg.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.
PAUL NICHOLAS LEECH, Secretary.

EUPHYDIGITAL NOT ACCEPTABLE
FOR N. N. R.

Euphydigital (Byk-Guldenwerke, Berlin, Germany; Byk, Inc., New York, American agents; Adolphe Hurst & Co., Inc., New York, General Distributors) is said to be a combination of Metaphyllin and digitalis. Each tablet is stated to contain 0.1 Gm. of Metaphyllin and 0.1 Gm. of powdered digitalis leaf ("150 frog doses"). Each suppository is said to contain 0.2 Gm. of Metaphyllin and 0.15 Gm. of powdered digitalis leaf ("225 frog doses"). One or two tablets are to be taken three times daily, or two or three suppositories daily. Metaphyllin (formerly called Euphyllin) is said to be a combination of approximately 78 per cent of theophylline with ethylenediamine, having the advantage of being more soluble than theophylline.

Advertising for Euphydigital received by a physician in April, 1932, states that "the action of digitalis can be considerably increased by the simultaneous administration of Metaphyllin." This is a remarkable statement in view of the fact that up to about 9 grains of digitalis daily is recommended in the form of Euphydigital. This advertising reiterates certain of the claims for Metaphyllin which the Council could not accept. Thus, it is stated, "Metaphyllin being a readily soluble combination of Theophylline, possesses in a specially high degree the characteristic, that besides effecting an increased excretion of water it also eliminates urea, common salt and extraneous substances. . . . Of particular importance is its action—which greatly surpasses that of any of the purin bodies—as a vasodilator. By reason of its dilatant action on the blood-vessels Metaphyllin has gained an ever-increasing significance as a cardiac. . . . An advantage of Metaphyllin of the greatest consequence is that the constrictive action which is effected on the coronary vessels by digitalis bodies is compensated by the vaso-dilatant action of Metaphyllin; and this is of special importance where anginous conditions are in question." Among the great advantages claimed for Euphydigital are: "By reason of the vaso-dilatant action of Metaphyllin, particularly that on the coronary vessels, Euphydigital may also be administered in coronary sclerosis and angina pectoris. . . . Euphydigital may also be given in cases of heart decompensation with raised bloodpressure for combating the insufficiency symptoms, as the bloodpressure-decreasing characteristic of the Metaphyllin constituents forms a safeguard against any further rise in the bloodpressure by means of the digitalis."

From the foregoing it is concluded, in the advertising circular, that "Euphydigital is thus not only indicated in all such cases where digitalis is employed, but by means of this preparation it has become possible to include in heart and circulatory therapy a range of disease conditions in which the necessary digitalis treatment in view of its by-effects was prohibited or had to be carried out with the utmost precaution." This is distinctly misleading, and even dangerous, because it implies that Metaphyllin permits of the use of digitalis in the treatment of disease conditions without the utmost precaution. It is well known that patients suffering with cardiac disease and nephritis often require both digitalis and one of the purines, such as theobromine or theophylline, and it is considered in the last degree irrational to use a mixture of digitalis with any other substance. Large doses of digitalis are commonly given in the beginning of treatment and the dose is greatly reduced as soon as the heart is digitalized. Similarly, one must determine the dose of the purine body from time to time, dependent on a variety of conditions, and this is quite impossible when one uses a mixture of the two substances. There is no evidence that Metaphyllin possesses the capacity for causing marked coronary dilatation in cases in which it is imperatively needed; and it is misleading to state that digitalis constricts the coronaries, because there is no evidence that digitalis has such action, especially when used in the presence of coronary sclerosis.

The Council declared Euphydigital unacceptable for New and Nonofficial Remedies because it is an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming, proprietary name, with exaggerated and unwarranted claims for its therapeutic value.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

IRRADIATED VITAMIN D PASTEURIZED
MILK ADVERTISING OF BORDEN'S
FARM PRODUCTS COMPANY
OF MICHIGAN

Distributor.—Borden's Farm Products Company of Michigan, Detroit (subsidiary of the Borden Company, New York).

Description.—Advertising for bottled pasteurized vitamin D milk irradiated by Steenbock Process (patent No. 1680818).

Preparation.—The milk complies with the analytic and bacteriologic requirements specified by the laws of the state of Michigan and the city of Detroit or other municipalities in which it is distributed.

The milk is pasteurized by the standard procedure (holding method, thirty minutes at 61 C.), is exposed in a thin moving film for sixteen seconds to ultraviolet rays from a battery of carbon arc lamps and is automatically bottled. The bottled milk complies with the requirements of the state of Michigan and of health departments having jurisdiction over its production, processing, bottling and distribution. The method of irradiation and the equipment are under scientific control.

Vitamins.—Clinical investigation shows this irradiated milk when used in proper quantities to be a reliable antirachitic agent protecting all infants excepting those prematurely born.

Claims of Manufacturer.—An irradiated antirachitic pasteurized milk having the natural unaltered flavor and other food values of standard pasteurized milk.

CERTI-TEST FLOUR (BLEACHED)

Manufacturer.—The Robinson Milling Company, Salina, Kan.

Description.—A "straight" hard winter wheat flour; bleached.

Manufacturer.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with nitrogen trichloride (one-seventh ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds).

Claims of Manufacturer.—The flour is for bread baking.

ROTH'S WHITE HEARTH BREAD
(CORNMEAL TOPPING)

Manufacturer.—The A. Roth Baking Company, Newport, Ky.

Description.—A white hearth bread with cornmeal topping made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sucrose, yeast, salt, malt syrup, lard and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for white bread.

K-K AMBER TABLE SYRUP (CORN SYRUP
FLAVORED WITH REFINERS' SYRUP)

Packer.—Wheeler-Barnes Company, Minneapolis.

Distributor.—Andrew Kuehn Company, Sioux Falls, S. D.

Description.—Table syrup; corn syrup base (85 per cent) with refiners' syrup (15 per cent); the same as Golden Oak Brand Amber Syrup (85 per cent corn syrup, 15 per cent refiners' syrup), described in THE JOURNAL, Dec. 3, 1932, page 1948.

**LARSEN'S STRAINED BEETS UNSEASONED—
READY FOR USE**

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved beets prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw beets. No added sugar or salt.

Manufacture.—Freshly harvested beets are sorted, washed, mechanically peeled, inspected for removal of undesirable material, steamed until soft and puréed in an atmosphere of steam in a paddle type puréeing machine of monel metal with a bronze rotor. The puréed beets are brought to the desired consistency with a small amount of water, heated to 82 C. in a closed kettle and automatically filled into washed cans, which are sealed and processed for thirty minutes at 116 C.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 89.7 |
| Total solids | 10.3 |
| Ash | 0.5 |
| Salt (NaCl) | 0.02 |
| Fat (ether extract) | 0.1 |
| Protein (N X 6.25) | 1.1 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference)... | 8.1 |

Calories.—0.4 per gram; 11 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

1. MINNEAPOLIS BEST FLOUR (BLEACHED)
2. COMMANDER FLOUR (BLEACHED)
3. BIG DIAMOND FLOUR (BLEACHED)
4. BEST ON RECORD FLOUR (BLEACHED)
5. SUNSHINE FLOUR (BLEACHED)

Distributors.—

1. Minneapolis Milling Company.
2. Commander Milling Company.
3. Big Diamond Mills Company.
4. Empire Milling Company.
5. Stokes Milling Company.

Subsidiaries of the Commander-Larabee Corporation, Minneapolis.

Description.—Hard spring wheat "straight" flour; bleached.

Manufacture.—Selected hard spring wheat is cleaned, washed, tempered, milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with one twenty-fifth ounce of nitrogen trichloride and with a mixture of three-fourths ounce of benzoyl peroxide and calcium phosphate per barrel.

Claims of Manufacturer.—For commercial bakeshop and family use.

**SPANG'S GOLDEN GUERNSEY
WHOLE MILK LOAF**

Manufacturer.—Spang's Home Bake Bakeries, Cleveland and Lorain, Ohio.

Description.—A milk bread made by the straight dough method (method described in THE JOURNAL, March 12, p. 889), prepared from flour, Guernsey whole milk, sucrose, yeast, salt and diastatic malt extract.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture (entire loaf) | 37.5 |
| Ash | 1.9 |
| Fat | 2.9 |
| Protein (N X 6.25) | 10.0 |
| Crude fiber | 0.2 |
| Carbohydrates other than crude fiber (by difference) .. | 47.5 |

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A milk bread conforming to the respective United States Department of Agriculture Definition and Standard. Guernsey milk is used.

BUTTER-CUP EVAPORATED MILK

Packer.—Dean Milk Company, Chicago.

Distributor.—R. A. McKee Corporation, New York.

Description.—Unsweetened, sterilized evaporated milk; the same as Dean's Quality Evaporated Milk (THE JOURNAL, Aug. 6, 1932, p. 477).

MOTHER'S JUMBO BREAD

Manufacturer.—M. Erickson Bakery Company, Inc., La Crosse, Wis.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sweetened skim condensed milk, lard, sucrose, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for white bread.

SUNSHINE SELF-RISING FLOUR (BLEACHED)

Manufacturer.—Saxony Mills, St. Louis.

Description.—This is the same as the accepted Arbitrator Patent Flour, Self Rising (Bleached) (THE JOURNAL, Jan. 14, 1933, page 117) containing soft winter wheat patent flour, calcium acid phosphate, baking soda and salt.

REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
RAYMOND HERTWIG, Secretary.

NOT ACCEPTABLE**RALSTON WHEAT OATA (NEW NAME)****NEW OATA (FORMER NAME)**

The Ralston Purina Company, St. Louis, has changed the name for its previously accepted "New Oata," a mixture of rolled oats and wheat, much the greater proportion of which is oats, to "Ralston Wheat Oata" without discussing the name change with the Committee. The new name "Wheat Oata," by giving first place to wheat, emphasizes the wheat content over that of the oats, thereby connoting that the wheat is in greater proportion than is the oats, which is contrary to fact, the oats being in much the greater proportion. The name "Wheat Oata," therefore, is misinformative and misleading. An appropriate descriptive name for this product would give first place to the predominant ingredient "oats." The label states, "This unusual porridge combines the distinctive flavors and the abundant health-building qualities of whole rolled wheat and whole rolled oats." Wheat and oats do not have "health building qualities" any more than do other common foods; no food provides or assures health. A complete diet adequate in all food essentials is necessary for health, but health depends on many other factors than nutrition.

The company was advised of the Committee's report but has not expressed itself as willing to change the inappropriate name and label statement. The Committee's acceptance is being withdrawn and the product will therefore no longer be listed among the Committee's accepted foods.

ACCEPTANCE WITHDRAWN

SAC-A-RIN BRAND APRICOTS, BARTLETT PEARS, MUSCAT GRAPES, ROYAL ANNE CHERRIES, TIDBITS HAWAIIAN PINEAPPLE, SEEDLESS GRAPES, YELLOW CLING PEACHES AND WHOLE RIPE KADOTA FIGS (PACKED WITHOUT ADDED SUGAR OR SALT)

Manufacturer.—Kings County Packing Company, Ltd., Oakland, Calif.

Discussion.—The manufacturer has not provided the complete list of the ingredients and quantities thereof, chemical analysis, specifications or description of materials used in its preparation, and description of manufacture being required for all accepted foods by the Committee's present Rules and Regulations. The previous acceptance of the Council on Pharmacy and Chemistry and later of the Committee on Foods is therefore being withdrawn; the products will no longer be listed among the Committee's accepted foods.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 8, 1933

POISONOUS INSECTICIDES AND PLANT SPRAYS

For every crop that is planted, nature provides several outlets. As is pointed out in the introduction to a symposium on insecticides¹ in *Industrial and Engineering Chemistry*, the first claimant is the human being who plants the crop, takes care of it and rightly expects to garner the fruits of his labor. The second claimant is a group of insects and fungi which also live on crops and which may at any time take advantage of the absence or deficiencies of the human planter in order to maintain its own life. Since the beginning of mankind on this earth, a battle has been waged constantly between these two types of claimants. Before the coming of modern chemical science it seemed likely that the insects would eventually win. Today, however, the development of the new science of plant husbandry has thrown the advantage with the human being.

Unfortunately, every change made in conditions of living brings about hazards that may not be considered at the time the changes are made. The motor car is a great advance but today probably is producing as many cases of illness and death as any recognized disease. Modern methods of living in apartment houses and of taking pleasure in groups of thousands have their advantages, but associated with these is the increased facility of transmission of respiratory disease. Previous to 1860, sprays of nicotine, tobacco dust and hellebore were chiefly used in combating the insects that live on plants. In that year paris green was introduced to control the Colorado potato beetle, and since that time a considerable number of arsenic-containing mixtures and compounds have been added to the farmer's armamentarium. Lead is used in many different forms. The possibility of hazards from arsenic, lead and similar types of substances has stimulated a search for less poisonous spray material. In the case of fruits, poisonous residues from insecticides may be removed by thorough washing, though this sometimes requires the employment of such strong agents as hydrochloric

acid. With vegetables there must be means of controlling the amount of insecticide applied, and also means for removal of residues by washing or stripping. In the case of some vegetables, such as asparagus, none of the methods now available seem certainly safe. In the symposium already referred to, the contributing authorities mention particularly the experiments with the application of chemical solvents, the cleaning of fruit by wiping and by washing, and similar methods.

In his contribution to the symposium, Dr. White² of the Food and Drug Administration indicates that federal jurisdiction cannot reach poisonous food within the borders of the individual states and that the responsibility of shipping wholesome food rests wholly on the shipper and the receiver. The Food and Drug Administration may seize food shipped in interstate commerce if it contains spray residues of arsenic, lead or fluorine in such amounts as to be found beyond a reasonable doubt dangerous to human health.

In the same symposium, Myers and his associates³ in New York point out that twenty-nine million pounds of calcium arsenate and twenty-nine million pounds of lead arsenate were employed for insecticide purposes in the year 1929 in this country. They endeavored to determine the extent of the hazard to human health and are inclined to believe that the presence of arsenic and lead in 80 per cent of human beings suffering with alopecia may indicate a causative relationship. They are convinced that present methods of washing and removing spray residue are inefficient and inexact, particularly as applied to compounds containing lead. The use of various chemicals such as selenium, thiocyanates and rotenone is discussed by chemists who gave special attention to these products. Incidentally, the development of plants for the grinding of derris root and other rotenone-bearing insecticides raises hazards for the workers in the plants who breathe the dusts and thereafter develop numbness of the lips and irritations of the throat.

Throughout the world, various commissions have considered the minimum amount of lead and arsenic remaining on fruits that have been sprayed, and in April, 1933, the Food and Drug Administration announced that 0.014 grain per pound, or 2 parts of lead (Pb) per million would be permitted, and that the arsenic would remain at 0.01 grain per pound, or 1.4 parts per million as As_2O_3 . These figures agree with those set up by a British royal commission⁴ dealing with a similar problem. The United States Department of Agriculture has constantly recommended acid washing methods; it has had difficulty in getting the compliance of farmers and fruit growers, who insist that there is no danger whatever from these metallic poisons as used on fruits and demand records of cases of poi-

2. White, W. B.: Poisonous Spray Residues on Vegetables, *ibid.*, p. 621.

3. Myers, C. N.; Throne, Binford; Gustafson, Florence, and Kingsbury, Jerome: Significance and Danger of Spray Residue, *ibid.*, p. 624.

1. Symposium on Insecticides, *Indust. & Engin. Chem.*, 25: 616 (June) 1933.

4. Report and Minutes of Evidence on Arsenical Poisoning from Beer and Other Articles, Eye & Spottiswoode, 1903.

soning or death attributable to the metallic residues. They rely, of course, on the fact that the poisoning is not acute but apt to be chronic, because no large amounts of poison are likely to be taken at one time by the consumer of the fruit. Moreover, growers do not appreciate the danger of cumulative chronic poisoning. Physicians living in areas devoted largely to fruit growing seem to be in support of the orchardists rather than of the Food and Drug Administration. For a while, attempts were made to substitute fluorine compounds for arsenicals but there is evidence which seems to establish the deleterious character of the fluorine compounds recommended.

In view of the available evidence, the consumer of today need not fear acute poisoning the next time he eats an apple, an orange, cabbage, lettuce or celery, or any of the other fruits or vegetables commonly sprayed or dusted with the insecticides that have been mentioned. It is well to know, however, that a hazard does exist although its exact extent is not yet quite measurable. In the interests of safety, not only from contamination by food handlers with infectious organisms but also because of the possible dangers from the metallic poisons that have been mentioned, it is well for the user to wash thoroughly and to cleanse such materials before putting them on the table in either the raw or the cooked form, and perhaps to strip and destroy the outer layers of lettuce, cabbage and similar vegetables that lend themselves easily to such manipulations. In the meantime, much excellent research is being carried on both by the government and by the industries involved to eliminate as far as possible these hazards to human health and life.

LATENT AVITAMINOSIS

The concept of deficiency diseases, in contrast to maladies that owe their origin to some positive factor such as infections or parasitic organisms in the body, is comparatively new; its varied implications are not yet clearly understood. Obviously, such manifestations as outspoken scurvy, florid rickets, severe beriberi and pronounced xerophthalmia no longer call for debate with respect to the genesis of the conspicuous symptoms. The clear recognition of the causes has served to hasten the prevention as well as the cure of the disorders. It may be expected that a large group of formerly disconcerting maladies will become rarities in parts of the world where they were at one time dreaded and managed at best with great difficulty.

There are, however, insidious features of incipient avitaminosis that are not so readily appreciated. The time has arrived when more serious consideration must be given to them; when the possibilities of their incidental and less obvious effects must be taken into account in presumably far more patients than is at present assumed to be likely. As a recent writer has

remarked,¹ since the cause of most deficiency diseases has been established, and since an efficacious and easily available cure has been found to exist in the observance of what is now regarded as a protective and well balanced diet, there is a strong tendency to regard these diseases as belonging to the bygone prescientific ages. This, together with the fact that ill health may be produced by deficiency of a food factor in amounts much smaller than those necessary to create the typical full-blown picture associated with its lack, explains why the deficiency syndromes are more common than their diagnosis. It is to be expected, therefore, that deficiency syndromes may occur in persons existing for any considerable length of time on a restricted diet, either therapeutic or voluntary, or as a result of dietary eccentricities.

"Latent" scurvy has long been under consideration by practitioners; it was contrasted with the so-called inveterate scurvy of the older writers. In his classic treatise on "Scurvy: Past and Present," A. F. Hess wrote that the acute, florid type presents a striking picture but must not be regarded as the common form of the disorder. "If we are to diagnose infantile scurvy early," he wrote, "and not overlook its more subtle manifestations, the classic textbook description must be augmented by portrayals of types of the disorder which are less crude and more difficult to recognize—of 'subacute' and of 'latent' scurvy." Indeed, Hess stated in 1920 that the condition of latent scurvy is probably the commonest type of the disorder. This was written, it should be added, at a period when the use of antiscorbutics had not yet become as widespread or nearly universal as is now the case.

Latent scurvy is undoubtedly only a single instance of numerous single or multiple incipient or subacute avitaminoses. McLester,² in discussing general malnutrition, has noted that man's diet is seldom faulty in respect to one factor alone. When deficient, it usually exhibits several errors, and the resulting clinical picture is correspondingly obscure. To use the words of McCollum, faulty diet does not often produce sudden and graphic consequences; its results are slow, insidious and difficult of recognition. The physician is chiefly interested in nutritional failure not because of its relation to scurvy, beriberi or any other well defined disease but because it produces numberless vague, poorly defined states of ill health. To prevent nutritional failure, the diet should be considered as a whole, and all essentials, whether vitamin, protein or mineral, should be accorded equal importance. The relation which these bear to one another is also of significance, for that which is optimal under certain conditions may under other circumstances and in other combinations be faulty.

1. Dry, T. J.: Avitaminosis in Natives of Rhodesia, *Arch. Int. Med.* 51: 679 (May) 1933.

2. McLester, J. S.: *Nutrition and Diet in Health and Disease*, Philadelphia, W. B. Saunders Company, 1931.

Even today one can cite recorded instances of malaise among persons living in the "twilight zone" of good nutrition. Often it occurs in patients who have resorted to some extreme or restricted dietary regimen in order to combat a well defined disorder. This was noted in the treatment of gastric ulcer by Davidson³ several years ago. He remarked that, in the overwhelming enthusiasm for controlling obvious functional derangements by dietetic measures, the maintenance of the patient on a diet containing the necessary accessory food factors is often ignored. Diet prescriptions—and proscriptions—in the management of colitis undoubtedly often conduce to mild avitaminosis; and superimposed infections undoubtedly aggravate the situation.

Even amid readily available opportunities for protection against avitaminosis, nutritive disaster may arise through ignorance or the perversions due to customs and habits. An illuminating instance has lately been reported by Dry,¹ who was a medical officer in Rhodesia, South Africa, serving the Kaffirs employed in governmental enterprises that took these natives away from their natural habitats. The government rations were well selected. The important sources of vitamins were green vegetables, meat and beans (which are sprouted prior to cooking), but the native was as likely to discard these as he was to render them valueless by excessive cooking. Latent scurvy was common, as were carious teeth among natives afflicted with the disease, and this is of unusual interest, as the African aborigines are credited with as nearly perfect teeth as are possible to be found. As might be expected, the medical administration of familiar antiscorbutics was promptly effective. Dry reports that the demand for fresh fruits and vegetables could be met only by importation from considerable distances, since local production of sufficient quantities was not possible. Even so, the supplies were not inadequate. But the most serious obstacle was the unwillingness of the native to make use of such supplies, once procured. The savage, whose mind is warped by fear and superstition and who is blind to the consequences of depending solely on his traditional fare under circumstances so entirely different from his traditional mode of living, cannot be readily induced to comprehend either the nature of his illness or the means to rectify it. In comparing the group of patients treated by means of oral administration at the outset with the group treated by the intravenous method, one can definitely state that the rate of recovery was more rapid, as shown by the shorter period of hospitalization when the latter form of administration was adopted. The experience of Dry adds another to the many instances which indicate that chronic malnutrition leads to physical inferiority. It is the problem of the intelligent clinician to discover and correct the defects at the earliest moment. In planning an attack against the danger, it is well to bear

in mind the dictum of a recent writer:² "Why are some people undernourished? Inability to secure proper food, ignorance of the laws of nutrition, and capricious appetite—one or all of these causes are usually responsible. In America it is only under rare conditions of extreme poverty that the first cause is effective; the person who knows what to eat can, by dint of effort, usually obtain it. The second reason is the usual one; a failure to appreciate the value of milk, fruits and green vegetables, and phobias toward meat are common. Perverted taste plays a minor rôle. Education is the logical corrective measure."

THE PROTEIN INTAKE OF PRESCHOOL CHILDREN

The progress of the physiologic sciences has been relatively slow in their investigation of certain periods of early life. The problems of infant nutrition, for example, have scarcely attracted less attention than have those of adult life; but until recently the earlier stages of childhood have had comparative neglect from students of human well being. Some of the reasons for this seeming indifference toward our adolescent population lie in the difficulties of investigation. The infant is under complete personal control, owing to its inability to shift for itself. The school child has developed a degree of intelligence that makes its cooperation reasonably easy to secure in many scientific investigations. Within the intermediate age groups there are obvious difficulties of management under the ordinary routine of child life. The growing organization of preschool training in this country has, however, afforded new possibilities that are rapidly being utilized in the study of the child.

This is cogently exemplified in the extensive records of the White House Conference on Child Health and Protection.¹ Because of the difficulties involved in children in the measurement of the output of heat either directly or indirectly under conditions of normal activity, investigators have turned their attention to studies of intake instead, assuming that the potential energy taken in as food under specified conditions should indicate the amount required. In general, such studies fall into two types: balance experiments and dietary studies. To date, all the balance experiments that have been reported have added only relatively meager data that can be used for standards. Many of the studies, to be sure, were not made for this purpose and should not be criticized on this score.

This situation leaves the possibility of dietary studies—observations on the actual food habits—of the preschool child as the best current procedure to establish food requirements in the early years after infancy. Dietary studies of individual children furnish the most desirable data. As one writer remarks: "It should be

3. Davidson, P. B.: *The Development of Deficiency Disease During Therapeutic Diets*, J. A. M. A. 90: 1014 (March 31) 1928.

1. Four volumes dealing with the growth and development of the child have been edited under the direction of Dr. Kenneth D. Blackfan and published by the Century Company, New York.

remembered that each individual child has his own caloric needs which may vary from that of others of the same age and size. This optimum is such that the child grows properly, feels well, is mentally and physically alert, and adjusts himself to his environment. Standards of food intake are of value in improving the welfare of children, but should not be used to the exclusion of the consideration of the problem of the individual child."

It is a truism that the amount of protein in children's diets should be sufficient to provide for growth, as well as for replacement of protein lost through the "wear and tear" constantly going on in the organism. What does the protein requirement represent in actual figures? A summary prepared by McKay and Evans² indicates, for healthy children of preschool age, a customary protein intake equivalent to from 2.6 to 3.3 Gm. per kilogram of body weight. This is, as might be expected, far greater than that of the adult man of 70 Kg., who consumes approximately 100 Gm. of protein a day. The preschool child adds to its protoplasmic masses quite rapidly during growth. The observations by McKay and Evans of "normal, healthy children" of nursery school age, in the Middle West, showed approximately 2.7 Gm. per kilogram of body weight, or 1.1 Gm. of protein per inch of body height. The protein intake of each child also varied considerably from day to day. Milk supplied slightly more than 50 per cent of the total protein, cereals 19 per cent, meat and eggs 19 per cent, fruit and vegetables 9 per cent, and fatty foods the remainder. Approximately 13 per cent of the total calories were derived from protein. Such a dietary is in general evidently consistent with good physical development in preschool children.

Current Comment

THE EARLY DIAGNOSIS OF MALIGNANT DISEASE

Malignant disease usually starts in one spot, possibly in an individual cell, and in the early stages is painless. A painless tumor or swelling therefore should never be disregarded. Malignant disease may advance for a time without causing symptoms or any disturbances in normal functions. In view of the inherent nature of cancer to spread or to invade distant areas, the earlier the patient submits to proper treatment the greater are his chances of recovery. Sir Holburt Waring,¹ president of the Royal College of Surgeons, has recently listed again the methods of examination that are available to the physician for the diagnosis of early malignant disease. A tumor observed by the patient or friends should be examined at once by a competent clinician. The examination should comprise visual observation of the tumor and palpation to determine its consistency

and connection with adjacent tissues. The clinician should determine whether the tumor is solid or fluid, the margins in relation to surrounding tissues should be determined, and the presence or absence of pain on manipulation should be noted. As most malignant tumors are opaque, the swelling should be transilluminated. After the local examination, the lymphatic glands that drain the affected area should be palpated. A solid enlargement of lymphatic glands may help to confirm the diagnosis of cancer. When a tumor is noted near one of the normal openings of the body it should be examined with the finger, or with the eyes through some special instrument such as the postnasal mirror or the rhinoscope to examine the nasal cavity, the esophagoscope to examine the esophagus, and the bronchoscope to examine the bronchi. The rectum and lower part of the colon can be examined through the tube of a sigmoidoscope, and the interior of the bladder with a cystoscope. When solid or liquid material can be obtained from a suspected lesion, it should be examined by the microscope. Sometimes particles of a cancer may be seen in the blood-stained discharge from the nipple. When a swelling is accessible it is not difficult to remove a portion for histologic examination. The specimen should be taken at the junction of the normal tissue and the suspected tumor and should be cut at right angles to the surface. The risk in doing biopsy of spreading the tumor when it is malignant, the writer says, probably can be avoided by the use of a diathermy knife in detaching a small portion. A roentgen examination may give valuable aid, especially when there is a suspicion of cancer of the alimentary canal. The roentgenograms should be made and interpreted by an expert radiologist after a conference with the clinician. This method applies also to the investigation of suspected tumors of bone and some other tissues. Definite diagnosis frequently demands the services of a diagnostic "team," including a clinician, a radiologist, a pathologist and a surgeon. Too much reliance, however, is sometimes placed on the histologic appearance of tissue removed at biopsy, and sometimes on the roentgen examination alone. According to Bennett,² roentgen examination will reveal cancer of the stomach in the early stages in nearly every case. The precision of such an examination has increased so rapidly that even many physicians are not aware of the exactitude with which diagnosis can be reached. The chemical examination in the diagnosis of cancer of the alimentary tract is important. Few cases will fail to give a positive test for blood in the stools or fail to reveal dependable evidence in a carefully made analysis of the stomach contents. There are now available quite accurate methods of examination and various tests that may be applied in the early diagnosis of cancer in various regions of the body. Gradually the public is becoming more and more aware of what scientific medicine has to offer in saving life when cancer threatens. When popular education has been developed to the utmost, many thousands more will consult their physicians early enough to permit control by the established methods now available.

2. McKay, H. and Evans, E. K.: Protein Used by Pre-School Children: I and II, *Bimonthly Bull., Ohio Agric. Exper. Sta.* 18: 80 and 84 (May-June) 1933.

1. Waring, Holburt: The Early Diagnosis of Malignant Disease, *Practitioner* 130: 113 (Feb.) 1933.

2. Bennett, T. I.: The Early Diagnosis of Carcinoma of the Stomach, *Practitioner* 130: 141 (Feb.) 1933.

PROCEEDINGS OF THE MILWAUKEE SESSION

MINUTES OF THE EIGHTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT MILWAUKEE, JUNE 12-16, 1933

(Concluded from page 53)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Reginald Fitz, Boston.

Dr. Walter L. Bierring, Des Moines, Iowa, read a paper on "Myocardosis: Its Recognition and Therapy." Discussed by Drs. R. I. Rizer, Minneapolis; Cadis Phipps, Boston, and Walter L. Bierring, Des Moines, Iowa.

Drs. William D. Stroud, Philadelphia, Melville A. Goldsmith, Jenkintown, Pa., D. Stewart Polk, Rosemont, Pa., and Francis Z. Thorp, Philadelphia, presented a paper on "Ten Years' Observation of Children with Rheumatic Heart Disease." Discussed by Drs. T. Duckett Jones, Boston; Albert G. Young, Boston, and William D. Stroud, Philadelphia.

Dr. Walter L. Bierring, Des Moines, Iowa, introduced the lecturer for this year, Dr. Lewis A. Conner, New York, who read a paper on "Review of the Development of Knowledge Concerning the Role of Syphilis in Cardiovascular Disease."

Dr. Irving S. Wright, New York, read a paper on "The Clinical Value of Human Capillary Studies." Discussed by Drs. Soma Weiss, Boston; Nelson W. Barker, Rochester, Minn., and Irving S. Wright, New York.

Dr. Samuel A. Levine, Boston, read a paper on "The Systolic Murmur: Its Clinical Interpretation." Discussed by Drs. James B. Herrick, Chicago; Fred M. Smith, Iowa City, and Samuel A. Levine, Boston.

THURSDAY, JUNE 15—MORNING

Dr. Garnett Cheney, San Francisco, read a paper on "The Treatment of the Anemia Associated with Disorders of the Liver: Its Response to Secondary Anemia, Liver Extract and Iron Therapy." Discussed by Drs. William P. Murphy, Boston; Cyrus C. Sturgis, Ann Arbor, Mich.; Reginald Fitz, Boston; Walter E. Simmonds, Chicago, and Garnett Cheney, San Francisco.

Dr. John P. Anderson, Cleveland, read a paper on "Hereditary Gaucher's Disease." Discussed by Drs. Dean Lewis, Baltimore; Norbert Enzer, Milwaukee, and John P. Anderson, Cleveland.

Drs. C. T. Stone and Meyer Bodansky, Galveston, Texas, presented a paper on "The Treatment of Polycythemia Vera: Report of Two Cases." Discussed by Drs. Charles F. Martin, Montreal; Moses Barron, Minneapolis; Nathan Rosenthal, New York, and C. T. Stone, Galveston, Texas.

Drs. Charles H. Watkins and Herbert Z. Giffin, Rochester, Minn., presented a paper on "Experience with Administration of Yellow Bone Marrow in the Treatment of Various Forms of Granulocytopenia." Discussed by Drs. H. N. Harkins, Chicago; F. W. Madison, Milwaukee, and Charles H. Watkins, Rochester, Minn.

Dr. Ralph A. Kinsella, St. Louis, read a paper on "Types of Chronic Rheumatism." Discussed by Drs. James S. McLester, Birmingham, Ala.; Walter Bauer, Boston, and Archer O'Reilly, St. Louis.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. C. T. Stone, Galveston, Texas; vice chairman, Dr. F. W. Madison, Milwaukee; secretary, Dr. William J. Kerr, San Francisco; delegate, Dr. James S. McLester, Birmingham, Ala.; alternate,

Dr. J. E. Paullin, Jr., Atlanta, Ga.; Executive Committee: Dr. C. T. Stone, Galveston, Texas; Dr. Reginald Fitz, Boston; Dr. G. Gill Richards, Salt Lake City.

On motion of Dr. Bunce, regularly seconded, the following resolution was adopted for transmission to the editor of THE JOURNAL for publication:

This section during the past year has lost by death its two most valued members. In the entire life of the American Medical Association no other two men have exerted such a happy influence on the affairs of this section or have done so much to maintain the high character of its deliberations as did Drs. Frank Billings and William Sidney Thayer.

The intellectual strength of Dr. Billings, his clear vision, his straightforward character, and his likability brought forth the affectionate esteem of all of us. This section will feel his fine influence many years to come.

Dr. Thayer's high ideals, his deep learning, his lovable character and his delightful personality produced a lasting influence on American medicine, and his going leaves a keenly felt vacancy in our consciousness. If we can speak of the pure in heart in medicine, that was Dr. Thayer.

Dr. J. M. Blackford, Seattle, read a paper on "Cholecystitis: A Study Based on a Follow-Up After Five to Fifteen Years of Two Hundred Patients Not Operated On." Discussed by Drs. Frank Smithies, Chicago; James F. Weir, Rochester, Minn., and J. M. Blackford, Seattle.

Drs. John H. Musser and D. O. Wright, New Orleans, presented a paper on "Hypertension, Obesity and Hyperglycemia." Discussed by Drs. Henry J. John, Cleveland; Hugo R. Romy, Chicago; Frederick A. Willins, Rochester, Minn.; Francis D. Murphy, Milwaukee; Emmett F. Horner, Louisville, Ky.; E. R. Nuzum, Santa Barbara, Calif., and John H. Musser, New Orleans.

Dr. Reginald Fitz, Boston, read the chairman's address, entitled "The Importance of Clinical-Pathologic Conferences in the Work of the Practitioner as Teacher."

Dr. H. B. Mulholland, University, Va., read a paper on "Pellagra: Review of Cases with Special Reference to the Gastric Secretions." Discussed by Drs. T. D. Spies, Cleveland; W. H. Sebrell, Jr., Washington, D. C.; J. S. McLester, Birmingham, Ala.; Frank Smithies, Chicago; A. L. Levin, New Orleans, and H. B. Mulholland, University, Va.

Dr. H. A. Reimann, Minneapolis, read a paper on "Primary Staphylococcic Pneumonia." Discussed by Drs. Leo G. Rigler, Minneapolis, and W. D. Sutliff, Boston.

Dr. LeRoy S. Peters, Albuquerque, N. M., read a paper on "Intrapleural and Extrapleural Pneumolysis in the Treatment of Pulmonary Tuberculosis." Discussed by Dr. J. A. Myers, Minneapolis.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Fred W. Rankin, Lexington, Ky.

Dr. Arnold S. Jackson, Madison, Wis., read a paper on "The Prevention of Complications in Thyroid Surgery." Discussed by Dr. Robert S. Dinsmore, Cleveland.

Dr. Alfred A. Strauss, Chicago, read a paper on "Cholecoduodenostomy and Gastro-Enterostomy for Chronic Biliary Stasis." Discussed by Drs. J. Tate Mason, Seattle; Waltman Walters, Rochester, Minn., and Alfred A. Strauss, Chicago.

Dr. Donald B. Wells, Hartford, Conn., read a paper on "The Aseptic Tannic Acid Treatment of Diffuse Superficial Burns."

Dr. H. L. Updegraff, Hollywood, Calif., read a paper on "Reconstructive Surgery and Old Facial Burns."

These two papers were discussed by Drs. S. J. Seeger, Milwaukee; Ferris Smith, Grand Rapids, Mich.; D. C. Enloe, Sherman, Texas, and Donald B. Wells, Hartford, Conn.

Dr. Stuart W. Harrington, Rochester, Minn., read a paper on "Symptomatology, Surgical Treatment and Results in Sixty Cases of Diaphragmatic Hernia." Discussed by Drs. C. A. Hedblom, Chicago; Lloyd Noland, Birmingham, Ala., and Stuart W. Harrington, Rochester, Minn.

Dr. Harold L. Foss, Danville, Pa., read a paper on "The Relative Merits of Spinal and Inhalation Anesthesia." Discussed by Drs. John S. Lundy, Rochester, Minn., and George W. Crile, Cleveland.

THURSDAY, JUNE 15—AFTERNOON

Dr. Henry W. Cave, New York, read a paper on "The Incidence and Prevention of Incisional Hernias." Discussed by Drs. Amos R. Koontz, Baltimore; Robert L. Payne, Norfolk, Va., and George A. Hendon, Louisville, Ky.

Dr. W. James Gardner, Cleveland, read a paper on "Removal of the Right Cerebral Hemisphere: Presentation of a Case." Discussed by Dr. Winchell McK. Craig, Rochester, Minn.

Dr. Fred W. Rankin, Lexington, Ky., read the chairman's address, entitled "The Curability of Cancer of the Colon, Rectosigmoid and Rectum."

Dr. Frank H. Lahey, Boston, read a paper on "Esophageal Diverticulum." Discussed by Drs. C. T. Sturgeon, Los Angeles; Roy D. McClure, Detroit, and Frank H. Lahey, Boston.

Dr. Norman S. Shenstone, Toronto, read a paper on "Surgical Indications in Bronchiectasis." Discussed by Drs. C. A. Hedblom, Chicago, and Norman S. Shenstone, Toronto.

Dr. Anatole Kolodny, Sioux City, Iowa, read a paper on "Results of Surgery in Spina Bifida." Discussed by Drs. W. James Gardner, Cleveland, and Harry E. Mock, Chicago.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. Harold Brunn, San Francisco; vice chairman, Dr. Roy D. McClure, Detroit; secretary, Howard M. Clute, Boston; delegate, J. Tate Mason, Seattle; alternate, Frank H. Lahey, Boston.

Dr. Gabriel Tucker, Philadelphia, read a paper on "Bronchoscopic Aid in the Diagnosis and Treatment of Postoperative Pulmonary Complications." Discussed by Dr. Ethian Flagg Butler, Elmira, N. Y.

Dr. William E. Ladd, Boston, read a paper on "Congenital Obstruction of the Small Intestine." Discussed by Drs. Albert H. Montgomery, Chicago; Warren H. Cole, St. Louis, and Frank K. Boland, Atlanta, Ga.

Dr. Thomas G. Orr, Kansas City, Mo., read a paper on "The Indications for Enterostomy." Discussed by Drs. W. D. Gatch, Indianapolis; J. Shelton Horsley, Richmond, Va., and George A. Hendon, Louisville, Ky.

Drs. O. H. Wangenstein and John R. Paine, Minneapolis, read a paper on "The Treatment of Acute Intestinal Obstruction by Suction with the Duodenal Tube." Discussed by Drs. Erwin R. Schmidt, Madison, Wis.; Willard Bartlett, Jr., St. Louis, and O. H. Wangenstein, Minneapolis.

Dr. Loyal Davis, Chicago, read a paper on "The Surgical Relief of Intractable Pain." Discussed by Drs. Max M. Peet, Ann Arbor, Mich., and John L. Garvey, Milwaukee.

Dr. Ernest H. Gaither, Baltimore, read a paper on "Eventual Results of Gastric Surgery." Discussed by Drs. J. Shelton Horsley, Richmond, Va., Alfred A. Strauss, Chicago, and Ernest H. Gaither, Baltimore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Barton Cooke Hirst, Philadelphia.

On motion of Dr. E. D. Plass, Iowa City, seconded by Dr. W. F. Seeley, Detroit, it was voted to nominate Dr. Reuben Peterson, Ann Arbor, Mich., former professor of obstetrics and gynecology at the University of Michigan Medical School, for Honorary Fellowship.

Dr. Lee Bivings, Atlanta, Ga., read a paper on "Preconceptional and Prenatal Influences Affecting the New-Born." Discussed by Drs. Fred L. Adair, Chicago; Raymond L. Schulz, Los Angeles, and Lee Bivings, Atlanta, Ga.

Drs. W. T. McConnell and Roland L. McCormack, Louisville, Ky., read a paper on "Carbon Dioxide and Oxygen in Obstetrics." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; E. D. Plass, Iowa City; Henry F. Beckman, Indianapolis, and W. T. McConnell, Louisville, Ky.

Dr. J. P. Greenhill, Chicago, read a paper on "Infiltration Versus Spinal Anesthesia in Obstetrics." Discussed by Drs. Joseph B. De Lee, Chicago; F. H. Falls, Chicago, and J. P. Greenhill, Chicago.

Dr. Leroy A. Calkins, Kansas City, Mo., read a paper on "Management of the Third Stage of Labor." Discussed by Drs. Jennings C. Litzenberg, Minneapolis; F. J. Schatz, St. Cloud, Minn.; Henry P. Newman, San Diego, Calif.; E. L. Cornell, Chicago, and Leroy A. Calkins, Kansas City, Mo.

Dr. Stuart B. Blakely, Binghamton, N. Y., read a paper on "Abdominal Pain in Pregnancy." Discussed by Drs. Rae T. La Vake, Minneapolis, and Stuart B. Blakely, Binghamton, N. Y.

Dr. Edward L. King, New Orleans, read a paper entitled "Does Quinine as Used in Induction of Labor Have a Deleterious Effect on the Fetus?" Discussed by Drs. F. H. Falls, Chicago, and Edward L. King, New Orleans.

THURSDAY, JUNE 15—MORNING

Dr. E. D. Plass, Iowa City, read a paper on "Gestational Polyneuritis." Discussed by Drs. Ralph H. Luikart, Omaha; J. H. Surc, Milwaukee; Rae T. La Vake, Minneapolis; F. H. Falls, Chicago; F. J. Schatz, St. Cloud, Minn., and E. D. Plass, Iowa City.

Dr. C. H. Peckham, Baltimore, read a paper on "Fetal Mortality in the Toxemias of Pregnancy." Discussed by Drs. John W. Harris, Madison, Wis.; Fred L. Adair, Chicago; Joseph B. De Lee, Chicago; A. C. Posner, New York, and C. H. Peckham, Baltimore.

Dr. Barton Cooke Hirst, Philadelphia, read the chairman's address, entitled "The Four Major Problems of Gynecology."

Dr. John P. Gardiner, Toledo, Ohio, read a paper on "Fetal Risks in the First Stage of Labor from Umbilical Cord Complications." Discussed by Drs. William J. Dieckman, Chicago; E. L. King, New Orleans; W. Parks Phillips, La Grange, Ga., and John P. Gardiner, Toledo, Ohio.

Dr. August A. Werner, St. Louis, read a paper on "Minimum Theelin Dosage Necessary to Stimulate Endometrial Changes in Castrated Women." Discussed by Drs. Emil Novak, Baltimore; J. P. Pratt, Detroit; E. B. Woods, Iowa City, and August A. Werner, St. Louis.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. Joseph B. De Lee, Chicago; vice chairman, Dr. Paul Titus, Pittsburgh; secretary, Dr. James R. McCord, Atlanta, Ga.; delegate, Arthur H. Curtis, Chicago; alternate, Carl Henry Davis, Milwaukee.

The following recommendations of the Executive Committee were adopted:

1. Formal approval of the resolution passed Monday requesting of the House of Delegates that Dr. Reuben R. Peterson, Ann Arbor, Mich., be made an Honorary Fellow of the Association.

2. That the section delegate at the next annual meeting submit to the House of Delegates the name of Dr. Howard A. Kelly, Baltimore, for honorary membership in the Association.

The Secretary read the following report of the Committee on Maternal Welfare, which was adopted:

During the past few years all of the members of your committee have occupied important positions on the Subcommittee on Maternal Care of the White House Conference on Child Health and Protection. One volume resulting from the work of this subcommittee dealing with obstetric education has been published; another volume on obstetric morbidity and mortality is in press; other publications will follow which will conclude the work in this field. Two members of your committee have served on the advisory committee concerned with the maternal mortality study of the federal Children's Bureau. This study has been carried on with the cooperation of the state medical societies of thirteen or fifteen selected states. It is now completed and in press. Your committee has served as a part of the Joint Committee on Maternal Welfare, whose time has largely been absorbed in the above-mentioned activities. A

meeting of this joint committee has been held at this session and activities have been planned for the ensuing year. We feel that the medical profession in certain communities is actively assuming leadership in approaching the problems of maternal welfare. This is most desirable and such activities should be continued and extended. Your committee and its members will continue to do what it can to stimulate and assist the medical profession and its members to activity in this field of human welfare. We respectfully submit this report and suggest that the committee be continued.

RUDOLPH W. HOLMES.

ROBERT MUSSEY.

FRED L. ADAIR, Chairman.

Dr. Emery Moore Fitch, Claremont, N. H., read a paper on "Crises of the Female Pelvis: Treated by the General Surgeon." Discussed by Drs. John F. Gile, Hanover, N. H.; Howard M. Clute, Boston; Joseph L. Baer, Chicago, and Emery Moore Fitch, Claremont, N. H.

Dr. Richard W. TeLinde, Baltimore, read a paper on "Cancer-Like Lesions of the Uterine Cervix." Discussed by Drs. George H. Gardner, Chicago, and Richard W. TeLinde, Baltimore.

Dr. Norman F. Miller, Ann Arbor, Mich., read a paper on "Posture and Dysmenorrhea: Report on a Four Year Study on 302 Young Women." Discussed by Drs. Carl Henry Davis, Milwaukee; Joseph L. Baer, Chicago; Marie Levinson, Bronx, N. Y.; L. L. Cullimore, Provo, Utah, and Norman F. Miller, Ann Arbor, Mich.

Dr. Virgil S. Counsellor, Rochester, Minn., read a paper on "Management of Chronic Pelvic Infection." Discussed by Drs. Francis W. Sovak, New York; Carl Henry Davis, Milwaukee, and Virgil S. Counsellor, Rochester, Minn.

Dr. Frederick S. Wetherell, Syracuse, N. Y., read a paper on "Relief of Pelvic Pain by Sympathetic Neurectomy." Discussed by Drs. J. P. Greenhill, Chicago; C. H. Frazier, Philadelphia, and Frederick S. Wetherell, Syracuse, N. Y.

Dr. Harold E. Simon, Birmingham, Ala., read a paper on "Colpectomy." Discussed by Dr. James C. Masson, Rochester, Minn.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Frederick H. Verhoeff, Boston.

Dr. Frederick H. Verhoeff, Boston, read the chairman's address, entitled "Ophthalmology as a Career."

Dr. T. B. Holloway, Philadelphia, presented the following resolution, for submission to the House of Delegates:

WHEREAS, Prenatal syphilis is responsible for interstitial keratitis and for many uveal and neural changes resulting in defective sight and blindness as well as deafness and other defects; and

WHEREAS, It has been found that above 3 per cent of the women attending prenatal clinics—in certain studies as high as 30 per cent—have shown a positive reaction to the Wassermann test, and it has been estimated on the basis of group studies that from 3 to 5 per cent of children taken in the mass have prenatal syphilis and that about half of these children without adequate treatment develop interstitial keratitis leading to defective vision if not blindness; and

WHEREAS, It has been authoritatively stated that prenatal syphilis can, without doubt, be prevented in the majority of cases, but only if there is complete cooperation between the patient and the various medical, social and educational agencies which enter into the diagnosis, the treatment and the care of the infected pregnant woman; and if treated adequately in the child before organic changes have occurred, is curable without loss of sight; and

WHEREAS, This deplorable condition can be controlled only by combined efforts of the medical, the social and public health authorities; therefore be it

Resolved, That this section requests the House of Delegates of the American Medical Association to appoint a committee to take this subject under advisement and to arrange methods by which cooperation may be secured through the combined efforts of the American Medical Association, the National Society for the Prevention of Blindness, the American Social Hygiene Association, the obstetric and ophthalmologic societies, the American Dermatological Association, public health organizations and such other organizations as can help, in order that blood examinations may be made of all pregnant women so that methods may be arranged for the treatment of all those infected with syphilis, thereby preventing the blindness and other tragedies which would otherwise inevitably follow.

On motion of Dr. Holloway, seconded by Dr. F. Park Lewis, Buffalo, the resolution was adopted.

Dr. N. K. Lazar, Chicago, read a paper on "The Effect of Tryparsamide on the Eye: An Experimental and Clinical Study and Report of a Case." Discussed by Drs. John H. Stokes, Philadelphia; Emory Hill, Richmond, Va.; F. A. Davis, Madison, Wis.; George N. Hosford, San Francisco; George F. Suker, Chicago; Leo L. Mayer, Chicago, and N. K. Lazar, Chicago.

Dr. Algernon B. Reese, New York, read a paper on "The Ciliary Processes and Their Relation to Intra-Ocular Surgery." Discussed by Dr. William C. Finnoff, Denver.

Dr. Edward Jackson, Denver, read a paper on "Practical Lenses: A Trial Set." Discussed by Drs. William E. Shahan, St. Louis; S. Judd Beach, Portland, Maine; William H. Crisp, Denver, and Edward Jackson, Denver.

Dr. Arthur M. Yudkin, New Haven, Conn., read a paper on "The Clinical Implications of Ocular Disturbances Produced in Experimental Animals by Dietary Changes." Discussed by Drs. C. S. O'Brien, Iowa City; K. W. Cosgrove, Little Rock, Ark.; Paul L. Day, Little Rock, Ark.; Laura A. Lane, Minneapolis, and Arthur M. Yudkin, New Haven, Conn.

Dr. William H. Crisp, Denver, read a paper on "Standards and Licensure in Ophthalmology." Discussed by Drs. T. B. Holloway, Philadelphia, and William H. Crisp, Denver.

Dr. Peter C. Kronfeld, Chicago, read a paper on "The Function of the Reattached Retina." Discussed by Drs. William L. Benedict, Rochester, Minn.; Clifford B. Walker, Los Angeles; V. A. Chapman, Milwaukee, and Peter C. Kronfeld, Chicago.

THURSDAY, JUNE 15—AFTERNOON

Dr. Thomas D. Allen, Chicago, gave a demonstration of the pathology of bullous keratitis.

Dr. Leo L. Mayer, Chicago, showed a hand slate and a method of recording visual fields.

Dr. David W. Wells, Boston, presented a modified instrument for testing depth perception after Bishop-Harman.

Dr. Clifford B. Walker, Los Angeles, described his instruments and the technic of scleral puncture for treating detachment of the retina by diathermy.

Dr. V. A. Chapman, Milwaukee, demonstrated safety spectacles for the color blind.

Dr. Oscar B. Nugent, Chicago, demonstrated superior rectus muscle forceps and an oral vacuum control valve and modified Green's suction cup.

Dr. Daniel B. Kirby, New York, presented matched cataract instruments with better steel in knife blades.

Dr. Harry S. Gradle, Chicago, presented experimental glasses for reducing vision.

Dr. Harry S. Gradle, Chicago, read a paper on "Critical Analysis and Comparison of Two Hundred Consecutive Cases of Cataract Intracapsular and Extracapsular Extraction." Discussed by Drs. Arnold Knapp, New York; Walter R. Parker, Detroit; Warren D. Horner, San Francisco; Jasper M. Molsberry, Iowa City; Otis R. Wolfe, Marshalltown, Iowa; Walter B. Lancaster, Boston; V. A. Chapman, Milwaukee, and Harry S. Gradle, Chicago.

Dr. Oscar B. Nugent, Chicago, read a paper on "Cataract Complications in Relation to Intra-Ocular Tension and Blood Pressure." Discussed by Drs. John Green, St. Louis, and Oscar B. Nugent, Chicago.

Dr. George P. Guibor, Chicago, read a paper on "A Study of the Possibilities of Orthoptic Training: Preliminary Report." Discussed by Drs. Luther C. Peter, Philadelphia; David W. Wells, Boston; Sanford R. Gifford, Chicago; Conrad Berens, New York; Thomas D. Allen, Chicago, and George P. Guibor, Chicago.

Dr. Henry P. Wagener, Rochester, Minn., read a paper on "The Arterioles of the Retina in Toxemia of Pregnancy." Discussed by Drs. Robert J. Masters, Indianapolis; Arthur J. Bedell, Albany, N. Y., and Henry P. Wagener, Rochester, Minn.

Drs. Warren D. Horner and Sol Maisler, San Francisco, presented a paper on "Ectopia Lentis, with Case Report of Total Dislocation Directly Downward." Discussed by Dr. William Zentmayer, Philadelphia.

Dr. Derrick T. Vail, Jr., Cincinnati, read a paper on "Mixed (Teratoid) Tumors of the Lacrimal Caruncle." Discussed by Dr. Thomas D. Allen, Chicago.

Dr. A. Beulah Cushman, Chicago, read a paper on "Visual Field Studies in Functional Headache of Pituitary Origin." Discussed by Dr. Clifford B. Walker, Los Angeles.

FRIDAY, JUNE 16—AFTERNOON

The members of the section stood in silence for a minute in memory of Dr. Albert E. Bulson.

The report of the Committee on Compensation Tables was read by Dr. Harry Gradle, and on motion of Dr. George F. Suker, Chicago, seconded by Dr. Arthur J. Bedell, Albany, N. Y., the report was accepted and the committee continued.

Edward Jackson, chairman, presented the report of the American Committee on Optics and Visual Physiology. On motion of Dr. Suker, seconded by Dr. Bedell, the report was adopted.

The report of the Committee on the Knapp Testimonial Fund was presented by Dr. Parker Heath. On motion of Dr. Bedell, seconded by Dr. Jackson, the report was adopted.

Dr. Clifford B. Walker, chairman, presented the report of the Committee on Awarding the Knapp Medal. On motion of Dr. Suker, seconded by Dr. Emory Hill, Richmond, Va., the report was accepted.

The report of the American Board for Ophthalmic Examinations was presented by Dr. William H. Crisp. On motion of Dr. Suker, seconded by Dr. Bedell, the report was adopted.

The report of the Committee on National Museum of Ophthalmic Pathology was presented for Dr. J. S. Friedenwald by the secretary. On motion of Dr. Bedell, duly seconded, the report was accepted and the committee continued.

As no member of the Committee from the Section to Cooperate with the National Committee for the Prevention of Blindness was present, the report as given with resolution Wednesday afternoon was accepted, and on motion of Dr. Bedell, duly seconded, was carried.

Dr. Parker Heath, chairman, presented the report of the Committee for Scientific Exhibit from the section. On motion of Dr. Hill, seconded by Dr. Bedell, the report was accepted and the chairman reappointed.

The report of the Committee to Confer with the National Conference on Nomenclature of Disease was presented by Dr. Walter B. Lancaster. On motion of Dr. Bedell, seconded by Dr. Suker, the report was received, the committee continued, and a vote of thanks tendered the members of the committee for their arduous work.

Dr. Edward Stieren, the delegate, not being present, on motion of Dr. Suker, seconded by Dr. Hill, the report Dr. Stieren made to the House of Delegates on June 15 was accepted as his report to the section.

The following officers were elected: chairman, Dr. William C. Finnoff, Denver; vice chairman, Dr. Frank E. Burch, St. Paul; secretary, Dr. Parker Heath, Detroit; delegate, Dr. George F. Suker, Chicago; alternate, Dr. Emory Hill, Richmond, Va.; member of American Board for Ophthalmic Examinations, to fill the three-year term expired of Dr. William H. Crisp, Dr. E. C. Ellett, Memphis, Tenn.; to fill two vacancies on the American Committee on Optics and Visual Physiology, Drs. Walter B. Lancaster, Boston, and William H. Luedde, St. Louis.

The Executive Committee, with the executive member of the permanent committee of the Knapp Testimonial Fund, recommended for treasurer of this fund to replace Dr. Albert E. Bulson, deceased, Dr. Parker Heath, Detroit.

The Executive Committee recommended the formation of a Committee on Ophthalmic History, to collect portraits, letters and other documents concerning the early ophthalmology of this country, the material to be placed in the permanent custody of the Army Medical Library in Washington, this committee to consist of Drs. Burton Chance, Philadelphia; Arnold Knapp, New York, and Harry Friedenwald, Baltimore.

The Executive Committee recommended the appointment of a committee to consider standards for ophthalmic appliances and drugs, and to make recommendations, this committee to consist of Drs. Francis H. Adler, Philadelphia; Clifford B. Walker, Los Angeles, and Sanford R. Gifford, Chicago, chairman.

The Executive Committee stated that it had the matter of the preessional volume under consideration and recommended that its reinstatement be made at the discretion of the committee.

The Executive Committee recommended that the number of papers at the next session be limited to fifteen, including the chairman's address, as this gives a more equitable division between presentation of papers and discussion.

The Executive Committee recommended that the demonstration session follow the regular reading of papers at one of the sessions.

The following members of the Committee on Awarding the Knapp Medal were nominated and elected from the floor: Drs. Hans Barkan, San Francisco; Arthur J. Bedell, Albany, N. Y., chairman, and Harry Friedenwald, Baltimore.

On motion of Dr. Bedell, seconded by Dr. Hill, the report of the Executive Committee was adopted and the officers therein named were elected.

Dr. Frederick H. Verhoeff, chairman, stated that the award of the Ophthalmic Research Medal of the American Medical Association is made through the Executive Committee of this section and announced that this year no award is made.

The Executive Committee recommended the adoption of the change in name of the American Board for Ophthalmic Examinations to the American Board of Ophthalmology.

Drs. William Campbell Posey, Radnor, Pa., and Lewis H. Carris, New York, presented a paper on "The National Society for the Prevention of Blindness—A Lay Movement for the Conservation of Vision." Discussed by Drs. William H. Wilder, Chicago; Conrad Berens, New York; S. B. Muncaster, Washington, D. C., and Lewis H. Carris, New York.

Dr. A. D. Ruedemann, Cleveland, read a paper on "Conjunctival Vessels." Discussed by Drs. Arthur J. Bedell, Albany, N. Y., and A. D. Ruedemann, Cleveland.

Drs. George N. Hosford and Avery M. Hicks, San Francisco, presented a paper on "The O'Connor Cinch Shortening Operation for Heterotopia and Heterophoria." Discussed by Drs. William F. Hardy, St. Louis; W. D. Horner, San Francisco, and George N. Hosford, San Francisco.

Dr. Charles N. Spratt, Minneapolis, read a paper on "Pocket-Flap Sclerecto-Iridodialysis in Glaucoma." Discussed by Drs. Walter B. Lancaster, Boston; Virgil J. Schwartz, Minneapolis, and Charles N. Spratt, Minneapolis.

Dr. James W. Smith, New York, read a paper on "Spontaneous Dislocation of the Lacrimal Glands." Discussed by Drs. F. Herbert Haessler, Milwaukee; Edward Jackson, Denver; V. A. Chapman, Milwaukee, and James W. Smith, New York.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Harris P. Mosher, Boston.

Dr. Harris P. Mosher, Boston, read the chairman's address, entitled "The Involvement of the Esophagus in Acute and Chronic Infection of Neighboring Organs."

On motion of Dr. John J. Shea, Memphis, Tenn., seconded by Dr. Austin A. Hayden, Chicago, it was voted to nominate the following for Associate Fellowship: A. J. Asgis, 310 West Seventy-Second Street, New York; Charles Cronauer, Jr., D.D.S., 100 East Palisade Avenue, Englewood, N. J.; J. Oliver Ericsson, D.D.S., Main and DeKalb streets, Norristown, Pa.; Nathan M. Gassen, D.D.S., 215 West Eighty-Eighth Street, New York; Louis V. Hayes, 576 Fifth Avenue, New York.

Dr. Harry P. Cahill, Boston, read a paper on "Modern Treatment of Brain Abscess." Discussed by Drs. Alfred W. Adson, Rochester, Minn.; R. Eustace Semmes, Memphis, Tenn.; W. James Gardner, Cleveland, and Harry P. Cahill, Boston.

Dr. Robert Sonnenschein, Chicago, read a paper on "Some of the Fundamental Principles of Functional Hearing Tests and Some Recent Developments in Tuning Forks and Sounding Rods." Discussed by Drs. W. H. Theobald, Chicago; Horace Newhart, Minneapolis, and Robert Sonnenschein, Chicago.

Dr. Gordon Berry, Worcester, Mass., read a paper on "The Psychology of Progressive Deafness." Discussed by Drs. Wendell C. Phillips, New York; John F. Curtin, Minneapolis; George E. Shambaugh, Jr., Chicago; William V. Mullin, Cleveland, and Gordon Berry, Worcester, Mass.

Dr. C. E. Cooper, Denver, read a paper on "The Future Market for Medical Service." Discussed by Drs. W. P.

Wherry, Omaha; Burt R. Shurly, Detroit; W. W. Pearson, Des Moines, Iowa; Samuel J. Kopetzky, New York; Charles A. Dukes, Oakland, Calif., and C. E. Cooper, Denver.

Dr. George E. Hourn, St. Louis, read a paper on "The Anatomic Contributions of Dr. Mosher." Discussed by Drs. Gregor W. McGregor, Toronto; William V. Mullin, Cleveland; Thomas E. Carmody, Denver; Homer Dupuy, New Orleans, and Joseph E. Beck, Chicago. Dr. Mosher expressed his thanks and appreciation to the members of the section.

THURSDAY, JUNE 16—MORNING

Dr. Edward F. Ziegelman, San Francisco, read a paper on "The Surgical Importance of the Laryngeal Nerves in Relation to the Thyroid Arteries, Thyroid Gland and Larynx." Discussed by Drs. William A. Kennedy, St. Paul; Robert S. Dinsmore, Cleveland; David D. Berlin, Boston; Charles H. Frazier, Philadelphia, and Edward F. Ziegelman, San Francisco.

Dr. A. C. Furstenberg, Ann Arbor, Mich., read a paper on "Mediastinitis: A Clinical Study with Practical Anatomic Considerations of the Neck and Mediastinum." Discussed by Drs. George W. Crile, Cleveland; Stuart W. Harrington, Rochester, Minn.; Thomas L. Tolan, Milwaukee, and A. C. Furstenberg, Ann Arbor, Mich.

Drs. Chevalier Jackson and Chevalier L. Jackson, Philadelphia, presented a paper on "Pulmonary Complications of Esophageal Disease." Discussed by Drs. Gabriel Tucker, Philadelphia; John B. Potts, Omaha; Samuel Iglaue, Cincinnati; Herman J. Moersch, Rochester, Minn.; M. F. Arbuckle, St. Louis, and Chevalier Jackson, Philadelphia.

Dr. Henry Boylan Orton, Newark, N. J., read a paper on "A Peculiar Form of Hyperplasia of the Mucous Membrane of the Upper Respiratory Tract." Discussed by Drs. H. M. Goodyear, Cincinnati; Ira Frank, Chicago; John J. Shea, Memphis, Tenn., and Henry Boylan Orton, Newark, N. J.

Dr. Gordon F. Harkness, Davenport, Iowa, read a paper on "The Involuntary Nervous System in Relation to Otolaryngology." Discussed by Drs. Dean M. Lierle, Iowa City; John W. Carmack, Indianapolis; Carl L. Larsen, St. Paul; Howard C. Ballenger, Chicago, and Gordon F. Harkness, Davenport, Iowa.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. W. P. Wherry, Omaha; vice chairman, Dr. Robert F. Ridpath, Philadelphia; secretary, Dr. John J. Shea, Memphis, Tenn.; Executive Committee, Drs. Gabriel Tucker, Philadelphia, Harris P. Mosher, Boston, and W. P. Wherry, Omaha; delegate, Dr. Burt R. Shurly, Detroit; alternate, Dr. Gordon F. Harkness, Davenport, Iowa.

The report of the Committee on Lye Legislation was accepted and the committee continued.

The reports of the Committee on Hygiene of Swimming and the American Board of Otolaryngology were received and placed on file.

The report of the Necrology Committee was accepted and the members of the section stood in silence for a moment in memory of the departed.

Dr. Charles Lukens, Toledo, Ohio, presented a device for binocular single vision to wearers of bifocals using head mirrors.

Drs. Gabriel Tucker and Eugene P. Pendergrass, Philadelphia, reported a case of congenital atresia of the esophagus and presented a method of combined roentgen and esophagoscopic technic.

Dr. Arthur W. Proetz, St. Louis, presented an apparatus for observing ciliary motion.

Dr. Gordon D. Hoople, Syracuse, N. Y., read a paper on "The Otorhinologic Aspects of Scarlet Fever." Discussed by Drs. Irving I. Muskat and Horace R. Lyons, Chicago; O. Jason Dixon, Kansas City, Mo.; Edward D. King, Cincinnati, and Gordon D. Hoople, Syracuse, N. Y.

Dr. Harold I. Lillie, Rochester, Minn., read a paper on "Infection of the Blood Stream Associated with Suppuration in the Temporal Bone." Discussed by Drs. George M. Coates, Philadelphia; James B. Costen, St. Louis, and Harold I. Lillie, Rochester, Minn.

Dr. Arthur W. Proetz, St. Louis, read a paper on "Principles of Sinus Treatment in the Light of Physiologic Facts." Discussed by Drs. Ralph A. Fenton, Portland, Ore.; Anderson

C. Hilding, Duluth, Minn.; J. A. Pratt, Minneapolis, and Arthur W. Proetz, St. Louis.

Dr. Harris H. Vail, Cincinnati, read a paper on "The Treatment of Hay Fever by Alcohol Injections in the Nose." Discussed by Drs. Frank J. Novak, Chicago; Virgil J. Schwartz, Minneapolis; M. F. Arbuckle, St. Louis, and Harris H. Vail, Cincinnati.

Drs. Karl Musser Houser and Eugene P. Pendergrass, Philadelphia, presented a paper on "The Diagnosis and Treatment of Primary Malignant Conditions of the Maxillary Sinuses." Discussed by Drs. Edward C. Sewall, San Francisco; M. R. Guttman, Chicago, and F. Z. Havens, Rochester, Minn.

SECTION ON PEDIATRICS

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. Frederic W. Schlutz, Chicago.

Dr. Frederic W. Schlutz, Chicago, read the chairman's address, entitled "The First Half-Century of the Section on Pediatrics."

Prof. E. Gorter, Leyden, Holland, read a paper on "Post-vaccinal Encephalitis."

Drs. William H. Park, Camille Kereszturi and Lucy Michelow, New York, presented a paper on "BCG Investigation in New York City: The Safety and Immunizing Value of the Vaccine." Discussed by Drs. Horton R. Casparis, Nashville, Tenn.; Karl E. Kassowitz, Milwaukee; Henry J. Gerstenberger, Cleveland; J. A. Myers, Minneapolis; Emil Bogen, Olive View, Calif., and William H. Park, New York.

Dr. S. W. Clausen, Rochester, N. Y., read a paper on "Limits of the Anti-Infective Value of Provitamin A (Carotene)." Discussed by Drs. Henry J. Gerstenberger, Cleveland, and I. Newton Kugelmass, New York.

Dr. Jean V. Cooke, St. Louis, read a paper on "Acute Leukemia in Children." Discussed by Dr. F. C. Rodda, Minneapolis.

Dr. Charles Glenville Giddings, Jr., Atlanta, Ga., read a paper on "The Normal Sleep Pattern for Children and the Factors That Can Derange Such Pattern." Discussed by Drs. M. Hines Roberts, Atlanta, Ga.; C. Ulysses Moore, Portland, Ore., and Charles Glenville Giddings, Jr., Atlanta, Ga.

THURSDAY, JUNE 15—AFTERNOON

Drs. Henry J. Gerstenberger, Arthur J. Horesli, G. Richard Russell and Edna E. Chapman, Cleveland, read a paper on "Serum Phosphatase in Infants and Children as Influenced by Various Diseases and Conditions." Discussed by Drs. J. R. Gerstley, Chicago, and Henry J. Gerstenberger, Cleveland.

Dr. Abraham Levinson, Chicago, read a paper on "Acute Transitory Cerebral Manifestations in Infants and Children." Discussed by Drs. M. G. Peterman, Milwaukee, and Abraham Levinson, Chicago.

Drs. E. B. Shaw and H. E. Thelander, San Francisco, presented a paper on "Endemic Cerebrospinal Fever in Childhood." Discussed by Drs. C. A. Aldrich, Winnetka, Ill.; A. B. Schwartz, Milwaukee; Josephine B. Neal, New York; Gilbert J. Levy, Memphis, Tenn., and E. B. Shaw, San Francisco.

Drs. Charles F. McKhann and Edward C. Vogt, Boston, presented a paper on "Lead Poisoning in Infants and Children." Discussed by Drs. R. A. Kehoe, Cincinnati; Robert A. Strong, New Orleans, and Katsuji Kato, Chicago.

Drs. E. Kost Shelton and Lyman A. Cavanaugh, Santa Barbara, Calif., and Herbert M. Evans, New York, presented a paper on "Hypophyseal Infantism: Treatment with an Anterior Hypophyseal Extract." Discussed by Drs. J. Victor Greenebaum, Cincinnati, and E. Kost Shelton, Santa Barbara, Calif.

Drs. Paul C. Hodges, Wright Adams and Wayne Gordon, with the assistance of Benjamin W. Anthony, Chicago, presented a paper on "Estimation of Cardiac Area in Children." Discussed by Drs. Julius H. Hess, Chicago, and Paul C. Hodges, Chicago.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. Alfred A. Walker, Birmingham, Ala.; vice chairman, Dr. C. W. Burhans, Cleveland; secretary, Dr. Ralph M. Tyson, Philadelphia; delegate, Dr. Isaac A. Abt, Chicago; alternate, Dr. A. Graeme Mitchell, Cincinnati; Executive Committee, Drs. Alfred A.

Walker, Birmingham, Ala.; Frederic W. Schlutz, Chicago, and Jay I. Durand, Seattle; representative on Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.

The following resolution, presented by the Executive Committee, was adopted:

Resolved, That the Section on Pediatrics extend a vote of thanks to the Milwaukee colleagues and particularly the vice chairman, Dr. M. G. Peterman, for the extraordinarily fine arrangements provided for the meetings, the splendid entertainment given at the section dinner, and the general hospitality extended to all the members of the section.

Dr. Frank C. Neff, Kansas City, Mo., presented the following report on behalf of the Jacobi Fund Committee:

During the fiscal year just ending, the Section Transactions published by the American Medical Association have been sent to all subscribers to the Jacobi Fund. Arrangements were made for bringing Professor E. Gorter, Leyden, Holland, as our guest for 1933. The Jacobi Fund is paying \$500 toward publishing the festschrift in honor of Czerny, which will appear in the July issue of the *Journal of Pediatrics*.

At the suggestion of Dr. Henry L. K. Shaw of Albany and Dr. Isaac Abt, with the consent of the members of the Jacobi Committee, arrangements have been begun toward erecting a bronze tablet at the entrance to Jacobi's summer home on Lake George which his daughter, Mrs. McEnery, now occupies. As you may recall, Carl Schurz and Abraham Jacobi came together from Germany and were always close friends. They bought property together at Bolton Landing, Lake George. An inscription in stone has been raised to the memory of Carl Schurz, and it is our plan to place one by its side in memory of Jacobi. This will be visible from the highway to all tourists passing Lake George. At a suitable time following its completion, the memorial will be dedicated in the presence of all members of this section who care to be present.

During the year the Jacobi Fund received a check for \$400 from the Association of American Teachers of Diseases of Children.

The committee wishes to express its appreciation of the loyalty and generosity of the members and friends of the Section on Pediatrics.

The financial report is appended.

THE ABRAHAM JACOBI MEMORIAL FUND COMMITTEE.

ISAAC A. ABT, Chairman.
WILLIAM WESTON.
C. ANDERSON ALDRICH.
JAY I. DURAND.
FRANK C. NEFF, Secretary.

The following is the Treasurer's report on the Jacobi Fund:

| | |
|---|-------------------|
| Balance on hand, June 1, 1932..... | \$5,479.16 |
| Receipts: | |
| 132 subscriptions for 1932..... | \$ 707.00 |
| 1 subscription for 1931 (late)..... | 5.00 |
| Interest at Traders Gate City National Bank..... | 19.04 |
| A savings account which permits an occasional check to be written. | |
| Interest at Anchor Sav. & Loan Assn..... | 2.17 |
| Income from Trust Fund..... | 241.96 |
| Contribution from Association of American Teachers of Diseases of Children..... | 400.00 |
| | <u>1,375.17</u> |
| | \$6,854.33 |
| Expenses: | |
| Dr. Krasnogorski | 200.00 |
| Printing announcements and receipt cards.... | 29.87 |
| Envelops | 4.83 |
| Postage | 31.00 |
| Telegrams | 5.80 |
| Exchange check Dr. Parsons, Birmingham, England | .25 |
| 1931 Transactions of Section..... | 1.52 |
| 132 copies 1932 Transactions of Pediatric Section A. M. A..... | 198.02 |
| Expenses Dr. Aycock to section meeting..... | 115.22 |
| | <u>586.51</u> |
| Balance on hand, June 1, 1933..... | \$6,267.82 |
| The fund is held as follows: | |
| On deposit at Traders Gate City National Bank | 661.33 |
| On deposit at Anchor Sav. & Loan Assn..... | 75.02 |
| Trust Fund | 5,531.47 |
| | <u>\$6,267.82</u> |

During the year of 1932 the sum of \$500 was transferred from the savings balance at the Traders to the Trust Fund held by the same bank.

Respectfully submitted.

FRANK C. NEFF, Treasurer.

Dr. Isaac A. Abt, Chicago, retired from the Jacobi Fund Committee, and Dr. Frederic W. Schlutz, Chicago, automatically became a member for a four-year term.

On motion regularly made and seconded, the report of the Jacobi Fund Committee was adopted, with the request that the complete report be published in the Section's Transactions.

Dr. Frederic W. Schlutz, Chicago, expressed the thanks of the section to Professor Gorter for delivering his splendid address.

Dr. Borden S. Veeder, St. Louis, presented the following resolution:

Resolved, That the Section on Pediatrics of the American Medical Association join with the American Academy of Pediatrics and the American Pediatric Society in the formation of an American Board of Pediatrics, for the purpose of certifying to the competence of physicians practicing pediatrics as a specialty.

That the recommendation in regard to the formation of this board, as published in the April 1933 issue of the *Journal of Pediatrics* be adopted.

That the Executive Committee of the Section on Pediatrics appoint three members to this board in the manner outlined in this report.

On motion regularly made and seconded, the resolution presented by Dr. Veeder was adopted.

Drs. Arthur F. Abt and M. I. Vinneccour, Chicago, presented a paper on "Electrocardiographic Studies During Pneumonia in Infants and Children." Discussed by Drs. Louis N. Katz, Chicago; M. H. Nathanson, Minneapolis, and Arthur F. Abt, Chicago.

Dr. I. Newton Kugelmass, New York, read a paper on "Birth Shock of the New-Born and Its Treatment." Discussed by Drs. Ralph M. Tyson, Philadelphia, and I. Newton Kugelmass, New York.

Drs. James D. Trask and Francis G. Blake, New Haven, Conn., read a paper on "Heterologous Scarlet Fever." Discussed by Drs. Jean V. Cooke, St. Louis, and John A. Toomey, Cleveland.

Drs. Ralph M. Tyson, Samuel Goldberg and Nathaniel M. Levin, Philadelphia, presented a paper on "A Clinical Study of Pulmonary Conditions Found in Children in the Chevalier Jackson Bronchoscopic Clinic." Discussed by Dr. Chevalier Jackson, Philadelphia.

Dr. E. S. Platou, Minneapolis, read a paper on "Obstructive Laryngeal Dyspnea in Diphtheritic and Acute Infective Laryngitis." Discussed by Drs. W. Ambrose McGee, Richmond, Va.; Kenneth A. Phelps, Minneapolis, and E. S. Platou, Minneapolis.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. E. M. K. Geiling, Baltimore.

Drs. J. Russell Twiss and Carl H. Greene, New York, presented a paper on "Newer Points of View in the Dietary and Medical Management of Diseases of the Gallbladder." Discussed by Drs. Sidney A. Portis, Chicago; C. B. Wright, Minneapolis; W. D. Mayer, Detroit, and Carl H. Greene, New York.

Drs. Melvin W. Binger and Norman M. Keith, Rochester, Minn., presented a paper on "Study of the Different Types of Edema and the Effect of Diuretics." Discussed by Drs. M. Herbert Barker, Chicago; Edward J. Stieglitz, Chicago, and Norman M. Keith, Rochester, Minn.

Dr. K. K. Chen, Indianapolis, read a paper on "Recent Studies on Toad Poisons." Discussed by Drs. William S. Middleton, Madison, Wis., and K. K. Chen, Indianapolis.

Dr. M. H. Nathanson, Minneapolis, read a paper on "Further Studies of the Effect of Drugs on the Induced Standstill of the Human Heart."

Dr. F. W. O'Connor, New York, read a paper on "The Treatment of Filariasis." No discussion.

THURSDAY, JUNE 15—AFTERNOON

Dr. E. M. K. Geiling, Baltimore, read the chairman's address, entitled "The Need for Conservatism in Endocrine Therapy and Research."

Dr. J. B. Collip, Montreal, read a paper on "The Relationship Between Active Principles of the Placenta and Pregnancy Blood and Urine, and Those of the Anterior Lobe of

the Pituitary, as Indicated by Numerous Experiments on Hypophysectomized Animals." Discussed by Drs. J. P. Pratt, Detroit; Harry Beckman, Milwaukee, and J. B. Collip, Montreal.

Dr. Harry B. Friedgood, Baltimore, read a paper on "Experimental Exophthalmos and Hyperthyroidism in Guinea-Pigs: Clinical Course and Pathology." Discussed by Drs. Walter M. Boothby, Rochester, Minn.; Alexander B. Gutman, New York; J. B. Collip, Montreal; L. M. Zimmerman, Chicago, and Harry B. Friedgood, Baltimore.

Drs. J. G. Reinhold, J. H. Clark, G. R. Kingsley, W. A. Wolff and J. W. McConnell presented a paper on "The Effects of Glycocoll in Muscular Dystrophy, with Especial Reference to Changes in Metabolism and in the Composition of Certain Voluntary Muscles."

Dr. Walter M. Boothby, Rochester, Minn., read a paper on "Myasthenia Gravis."

These two papers were discussed by Harriet Edgeworth, Ph.D., Tucson, Ariz.; Drs. Frederick P. Moersch, Rochester, Minn.; Erwin Brand, New York, and Meyer Solomon, Chicago; Maurice B. Visscher, Ph.D., Chicago, and Drs. M. H. Nathanson, Minneapolis; J. H. Clark, Philadelphia, and Walter M. Boothby, Rochester, Minn.

Dr. Frederick M. Allen, Morristown, N. J., read a paper on "Insulin in the Treatment of Tuberculosis." Discussed by Drs. F. F. Callahan, Pokegama, Minn.; F. M. Pottenger, Monrovia, Calif.; E. S. Nichol, Miami, Fla.; Moses Barron, Minneapolis; William S. Collens, Brooklyn, and Frederick M. Allen, Morristown, N. J.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. John H. Musser, New Orleans; vice chairman, Dr. C. H. Greene, New York; secretary, Dr. Russell L. Haden, Cleveland. The delegate, Dr. N. M. Keith, Rochester, Minn., and the alternate, Dr. Cary Eggleston, New York, hold over from last year.

Phoebe J. Crittenden, Washington, D. C., and P. D. Lamson, Nashville, Tenn., were nominated for Associate Fellowship.

The following papers were read as a symposium on "The Treatment of Acute Infectious Diseases":

Dr. Luke W. Hunt, Chicago: "Therapeutic Results with Scarlet Fever Antitoxin."

Dr. Ward J. MacNeal, New York: "Specific Treatment of Septic Infections, Particularly with Aid of Bacteriophages."

Dr. Lee Foshay, Cincinnati: "An Antiserum for the Treatment of Tularemia."

Dr. Louis W. Sauer, Evanston, Ill.: "Immunization with Bacillus Pertussis Vaccine."

Dr. Yale Kneeland, Jr., New York: "Problems Connected with the Etiology and Prophylaxis of Disease of Upper Respiratory Tract."

These five papers were discussed by Drs. William H. Park, New York; H. A. Reimann, Minneapolis; Raymond P. Schowalter, Milwaukee; Paul S. Rhoads, Evanston, Ill.; Walter M. Simpson, Dayton, Ohio; Gilbert J. Levy, Memphis, Tenn.; Luke W. Hunt, Chicago; Ward J. MacNeal, New York; Louis W. Sauer, Evanston, Ill.; Lee Foshay, Cincinnati, and Yale Kneeland, Jr., New York.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. Clyde Brooks, New Orleans.

On motion, regularly made and seconded, it was voted to nominate the following for Associate Fellowship: John A. E. Eyster, Madison, Wis.; Stewart A. Koser, University of Chicago, Chicago; Esmond R. Long, Philadelphia; Valy Menkin, Harvard Medical School, Boston.

Dr. Max Cutler, Chicago, read a paper on "Benign Lesions of the Breast, Simulating Cancer: Diagnosis and Treatment." Discussed by Drs. Frank W. Hartman, Detroit; J. J. Moore, Chicago; J. Shelton Horsley, Richmond, Va.; Arthur F. Abt, Chicago, and Max Cutler, Chicago.

Dr. R. S. Ferguson, New York, read a paper on "The Pathologic Physiology of Teratoma Testis." Discussed by Drs. Frank W. Hartman, Detroit, and R. S. Ferguson, New York.

Drs. A. B. McGraw and F. W. Hartman, Detroit, presented a paper on "The Present State of the Biopsy." Discussed by Drs. William Carpenter MacCarty, Rochester, Minn., and Max Cutler, Chicago.

Drs. Emil Novak and J. Herman Long, Baltimore, presented a paper on "Ovarian Tumors Producing Secondary Sex Changes." Discussed by Drs. Richard W. TeLinde, Baltimore, Fred Krock, Fort Smith, Ark., and Emil Novak, Baltimore.

Dr. A. G. Foord, Pasadena, Calif., read a paper on "Leukemic Reticulo-Endotheliosis—Monocytic Leukemia." Discussed by Drs. Roy R. Kracke, Emory University, Ga.; C. H. Bunting, Madison, Wis.; R. S. Boles, Philadelphia; Frederic E. Sondern, New York; Victor Levine, Chicago, and A. G. Foord, Pasadena, Calif.

Dr. Frank L. Rector, Evanston, Ill., read a paper on "Present-Day Cancer Problems."

THURSDAY, JUNE 15—MORNING

Dr. Clyde Brooks, New Orleans, read the chairman's address, entitled "Nonspecific Protein Therapy."

Dr. Narcisse F. Thiberge, New Orleans, read a paper on "Typhoprotein and Histamine in the Treatment of Asthma." Discussed by Drs. Clyde Brooks, New Orleans; Robert Kapsinow, Lafayette, La.; Leon Unger, Chicago; S. A. Swenson, Oakland, Neb., and Narcisse F. Thiberge, New Orleans.

Dr. A. L. Levin, New Orleans, read a paper on "The Value of Nonspecific Protein in the Treatment of Peptic Ulcer." Discussed by Drs. Robert Kapsinow, Lafayette, La.; Walter E. Vest, Huntington, W. Va.; Sidney A. Portis, Chicago; J. V. S. Dauksys, Excelsior Springs, Mo.; A. A. Herold, Shreveport, La.; William C. MacCarty, Rochester, Minn., and A. L. Levin, New Orleans.

Dr. Clarence A. Neymann, Chicago, read a paper on "The Physiology of Electropexia." Discussed by Drs. William Bierman, New York; Walter M. Simpson, Dayton, Ohio, and Clarence A. Neymann, Chicago.

Dr. Leon Unger, Chicago, read a paper on "Studies on Pollen and Pollen Extracts: The Chemical Nature of Pollen Allergens."

Dr. Maxwell Finland, Boston, read a paper on "A Characterization of Pneumonia Due to Type III Pneumococcus and a Biologically Closely Related Strain Type VIII (Cooper)." Discussed by Drs. W. D. Sutliff, Boston, and Maxwell Finland, Boston.

Dr. Henry J. Corper, Denver, read a paper on "Growing Tubercle Bacilli." Discussed by Drs. Henry C. Sweany, Chicago; A. L. Levin, New Orleans, and Henry J. Corper, Denver.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. William Carpenter MacCarty, Rochester, Minn.; vice chairman, Dr. Elias P. Lyon, Minneapolis; secretary, Dr. J. J. Moore, Chicago; delegate, Dr. D. J. Davis, Chicago; alternate, Dr. J. J. Moore, Chicago; Executive Committee, Drs. J. H. Black, Dallas, Texas; Clyde Brooks, New Orleans, and William Carpenter MacCarty, Rochester, Minn.

Dr. Allan Winter Rowe, Boston, read a paper on "The Toxemias of Pregnancy: IV. The Nitrogen Metabolism." Discussed by Drs. Walter Boothby, Rochester, Minn., and Allan Winter Rowe, Boston.

Dr. E. G. Bannick, Rochester, Minn., read a paper on "Lipoid Nephrosis and Its Relation to Glomerular Nephritis." Discussed by Drs. M. H. Barker, Chicago; Dwight L. Wilbur, Rochester, Minn., and E. G. Bannick, Rochester, Minn.

Drs. Elizabeth M. Koch, Millicent L. Hathaway and Fred C. Koch, Chicago, presented a paper on "The Interpretation of Blood Sugar Values as Obtained by Different Methods."

Drs. George M. Curtis and Francis J. Phillips, Columbus, Ohio, presented a paper on "The Significance of the Iodine Content of Human Blood." Discussed by Drs. Willard O. Thompson, Chicago; R. G. Turner, Detroit, and George M. Curtis, Columbus, Ohio.

Dr. V. H. Moon, Philadelphia, read a paper on "The Pathology of Medical Shock or Circulatory Collapse." Discussed by Drs. J. P. Simonds, Chicago; Louis M. Warfield, Milwaukee; Robert Kapsinow, Lafayette, La., and V. H. Moon, Philadelphia.

Dr. William J. Hoffman, New York, read a paper on "Post-mortem Examinations: Method of Obtaining Permission." Discussed by Drs. F. W. Hartman, Detroit; Israel Davidsohn, Chicago, and William J. Hoffman, New York.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. George B. Hassin, Chicago.

On motion of Dr. Tom B. Throckmorton, Des Moines, Iowa, regularly seconded and carried, the following resolution was adopted:

WHEREAS, The American Psychiatric Association has appointed from its membership a special board, one of whose duties is to prepare and outline a plan for certification of psychiatrists; and

WHEREAS, It is the opinion of the Section on Nervous and Mental Diseases of the American Medical Association that it should be represented on a certifying board of psychiatry; be it therefore

Resolved, That this section cooperate with the American Psychiatric Association and other national organizations concerned in the formation of such a certifying board by the selection of five of its members.

The following board was appointed by the chairman: Drs. Walter Freeman, Washington, D. C.; Lloyd H. Ziegler, Albany, N. Y.; Edwin G. Zabriskie, New York; T. Allen Jackson, Danville, Pa., and George W. Hall, Chicago.

On motion regularly made, seconded and carried, the following resolution was adopted:

WHEREAS, A knowledge of prevailing methods of providing psychiatric service for courts and other agencies having to do with crime and criminals is essential to the establishment of an adequate psychiatric service on an efficient basis,

Resolved, That the American Medical Association recognizes the desirability of a survey of prevailing methods by which psychiatric service is now provided for courts and other agencies dealing with crime and of the results of such methods; and further

Resolved, That the Association urges its constituent and component societies to devote at least one meeting annually, to which members of the local bar associations shall be invited, for the joint discussion of psychiatric service in the administration of criminal justice and the treatment of the offender.

Dr. Theodora Wheeler, Chicago, read a paper on "Various Aspects of Seizure Graphs in Epilepsy." Discussed by Drs. Roland P. Mackay, Chicago; Richard B. Richter, Chicago, and Theodora Wheeler, Chicago.

Dr. Charles H. Frazier, Philadelphia, read a paper on "A Clinical Survey of Seventy-Eight Verified Tumors of the Frontal Lobe." Discussed by Drs. Alfred W. Adson, Rochester, Minn.; Max M. Peet, Ann Arbor, Mich., and Charles H. Frazier, Philadelphia.

Dr. Roland M. Klemme, St. Louis, read a paper on "The Surgical Treatment of Septic Meningitis." Discussed by Drs. Alfred W. Adson, Rochester, Minn.; Charles H. Frazier, Philadelphia; J. A. Danna, New Orleans, and Roland M. Klemme, St. Louis.

Drs. Paul H. Garvey and John S. Lawrence, Rochester, N. Y., presented a paper on "Facial Diplegia in Lymphatic Leukemia."

Dr. I. B. Diamond, Chicago, read a paper on "Leukemic Changes in the Brain."

These two papers were discussed by Drs. George B. Hassin, Chicago; Richard H. Jaffe, Chicago; Tom B. Throckmorton, Des Moines, Iowa, and Paul H. Garvey, Rochester, N. Y.

Dr. Theodore Diller, Pittsburgh, read a paper on "Lying as a Problem That Concerns the Medical Profession." Discussed by Drs. A. I. Rosenberger, Milwaukee; Lloyd H. Ziegler, Albany, N. Y.; George B. Lake, North Chicago, Ill.; John Favill, Chicago, and Theodore Diller, Pittsburgh.

THURSDAY, JUNE 15—AFTERNOON

On motion regularly made, seconded and carried, the following resolution was adopted:

WHEREAS, Heredosophilis or congenital syphilis is responsible, among its other adverse effects, for the juvenile dementia paralytica and severe emotional problems in children arising from the discomfort and social attitude toward syphilis and the problems of adjustment arising from its effect on vision; and

WHEREAS, Heredosophilis through the early and effective treatment of the infected pregnant woman is a preventable disease, and if treated in the child before organic changes have occurred is curable; and

WHEREAS, It has been found that an average of from 8 to 10 per cent of women in prenatal clinics have positive Wassermann reactions, in various clinics the figures ranging from 3 to 30 per cent, and it has been estimated on the basis of group studies that 2 per cent of children taken in the mass and a considerably larger proportion of those under 1 year of age have heredosyphilis and that about half of these children without adequate treatment develop interstitial keratitis leading to defective vision if not blindness, and that others develop even more serious neural disorders; and

WHEREAS, This deplorable condition can be controlled only by the combined efforts of the medical, the social and the public authorities; therefore, be it

Resolved, That this section requests the House of Delegates of the American Medical Association to appoint a committee to take this subject under advisement and to arrange methods by which cooperation may be secured through the combined efforts of the National Society for the Prevention of Blindness, the American Social Hygiene Association, and professional societies of the syphilologists, obstetricians, ophthalmologists, public health organizations, and such other organizations as can help, in order that blood examinations may be made of all pregnant women so that methods may be arranged for the treatment of all those infected with syphilis, thereby preventing the blindness and other tragedies which would otherwise inevitably follow.

Dr. George B. Hassin, Chicago, read the chairman's address, entitled "So-Called Circulation of the Spinal Fluid."

Dr. Lloyd H. Ziegler, Albany, N. Y., read a paper on "Hysterical Fugues: Report of Cases." Discussed by Drs. Frederick P. Moersch, Rochester, Minn.; George W. Hall, Chicago; Edward E. Mayer, Pittsburgh; Theodore Diller, Pittsburgh, and Lloyd H. Ziegler, Albany, N. Y.

Drs. Meyer M. Harris and Erwin Brand, New York, presented a paper on "Metabolic and Therapeutic Studies in the Myopathies with Special Reference to Glycine Administration." Discussed by Drs. Edwin G. Zabriskie, New York; Hans H. Reese, Madison, Wis., and Meyer M. Harris, New York.

Drs. Paul A. O'Leary and Ashton L. Welsh, Rochester, Minn., presented a paper on "Treatment with Malaria of Neurosyphilis: Observations on 984 Cases in the Last Nine Years." Discussed by Drs. Walter Freeman, Washington, D. C., and Paul A. O'Leary, Rochester, Minn.

Dr. Roy R. Grinker, Chicago, read a paper on "The Results of Treatment of the Neurologic Complications of Pernicious Anemia." Discussed by Drs. Walter F. Schaller, San Francisco; George W. Hall, Chicago; Paul H. Garvey, Rochester, N. Y.; William P. Murphy, Boston; Alexander B. Magnus, Chicago, and Roy R. Grinker, Chicago.

Dr. Tom B. Throckmorton, Des Moines, Iowa, delegate, presented his report.

On motion of Dr. George W. Hall, Chicago, severally seconded, a vote of thanks was extended Dr. Throckmorton.

Drs. Richard E. Stout and Louis J. Karnosh, Cleveland, presented a paper on "Acute Disseminated Encephalomyelitis: Its Clinical Manifestations and Sequelae." Discussed by Drs. Howard D. McIntyre, Cincinnati; Theodore T. Stone, Chicago; Gerald F. Kempf, Indianapolis, and Richard E. Stout, Cleveland.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. Henry W. Woltman, Rochester, Minn.; vice chairman, Dr. Thomas J. Heldt, Detroit; secretary, Henry R. Viets, Boston; delegate, Dr. Tom B. Throckmorton, Des Moines, Iowa; alternate, Dr. Edward Delehanty, Denver; Executive Committee, Drs. Franklin Ebaugh, Denver; George B. Hassin, Chicago, and Henry W. Woltman, Rochester, Minn.

Dr. Carl P. Wagner, Hartford, Conn., read a paper on "The Pharmacologic Action of the Barbiturates and Their Value in Neuropsychiatric Conditions." Discussed by Drs. W. J. Bleckwenn, Madison, Wis.; Walter Freeman, Washington, D. C.; Alexander B. Magnus, Chicago, and Carl P. Wagner, Hartford, Conn.

Drs. Titus H. Harris and Abe Hauser, Galveston, Texas, presented a paper on "The Mechanism of the Anxiety States: Its Importance in General Medicine." Discussed by Drs. George S. Johnson, Denver; A. I. Rosenberger, Milwaukee; Samuel Plahner, Milwaukee; Meyer Solomon, Chicago; George B. Lake, North Chicago, Ill.; Alfred P. Solomon, Chicago, and Titus H. Harris, Galveston, Texas.

Dr. William A. Thomas, Chicago, read a paper on "Generalized Edema Occurring Only at Menstrual Period." Discussed by Drs. George W. Hall, Chicago; Edward Allen, Chicago, and William A. Thomas, Chicago.

Dr. Eric Oldberg, Chicago, read a paper on "Surgical Considerations of Carcinomatous Metastases to the Brain." Discussed by Drs. George W. Hall, Chicago; Winchell McK. Craig, Rochester, Minn., and George B. Hassin, Chicago.

Dr. Winchell McK. Craig, Rochester, Minn., read a paper on "Cerebral Cysts." Discussed by Dr. James W. Kernohan, Rochester, Minn.; Hans H. Reese, Madison, Wis., and J. Rudolph Jaeger, Denver.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Francis Eugene Seneor, Chicago.

Dr. Howard Fox, New York, reported briefly on the activities of the Board of Examiners in Dermatology and Syphilology. On motion of Dr. John Lane, seconded by Dr. James H. Mitchell, and carried unanimously, Dr. Howard Morrow, San Francisco, was elected to succeed himself as a member of this board for a term of four years.

The secretary presented the following resolution for consideration:

WHEREAS, Heredosophilis or congenital syphilis is responsible among its other adverse effects for interstitial keratitis and for many uveal and neural changes resulting in defective sight and blindness; and

WHEREAS, Heredosophilis, through the early and effective treatment of the infected pregnant woman and the child, is a controllable disease; and

WHEREAS, It has been found that an average of from 8 to 10 per cent of women in prenatal clinics have positive Wassermann reactions, in various clinics the figures ranging from 3 to 30 per cent, and it has been estimated on the basis of group studies that 2 per cent of children taken in the mass and a considerably larger proportion of those under 1 year of age have heredosophilis, and that about half of these children without adequate treatment develop interstitial keratitis leading to defective vision if not blindness; and

WHEREAS, This deplorable condition can be controlled only by the combined efforts of the medical, the social and the public health authorities; therefore be it

Resolved, That the Section on Dermatology and Syphilology requests the House of Delegates of the American Medical Association to appoint a committee to take this subject under advisement and to arrange methods by which cooperation may be secured through the combined efforts of the National Society for the Prevention of Blindness, the American Social Hygiene Association, and professional societies of syphilologists and dermatologists, urologists, obstetricians, ophthalmologists, public health organizations and such other organizations as can help.

On motion of Dr. F. D. Weidman, Philadelphia, seconded by Dr. Elmore B. Tauber, Cincinnati, the resolution was adopted.

Dr. F. D. Weidman, Philadelphia, reported briefly for the Committee on Scientific Exhibit and expressed his appreciation of the splendid cooperation of the members of his committee and of the section as a whole. Dr. Weidman stated that the funds contributed to cover the expense of the exhibit were just about exhausted and asked whether it was the wish of the section that the scientific exhibit be continued, and that a collection be taken up among the members as had been the custom in the past. He further stated that no funds had been solicited for four years and that the expenses in connection with the exhibit would become less and less, because each year the central exhibit committee of the American Medical Association assumes more and more of the expense of the scientific exhibits.

Dr. Walter J. Highman, New York, moved that the section take action to perpetuate the exhibit and that an appropriate assessment be levied on the members present. The motion was seconded.

Dr. John E. Lane, New Haven, Conn., offered as an amendment that the chairman ask for voluntary contributions from the members present, and that in view of the low state of finances at present the contributions need not be large.

Dr. Highman accepted Dr. Lane's amendment and the motion as amended was put to a vote and unanimously carried.

Dr. John E. Lane, New Haven, Conn., moved a vote of thanks to Dr. Weidman and his associates for the extremely valuable work they had done in connection with the scientific exhibit. The motion was seconded by Dr. Otto H. Foerster, Milwaukee, and George M. MacKee, New York, and unanimously carried.

The chairman requested the secretary to act as chairman of a committee to handle the contribution, and appointed

Dr. Jeffrey C. Michael, Houston, Texas, and James Herbert Mitchell, Chicago, as the active collectors of the funds.

Dr. Francis Eugene Seneor, Chicago, read the chairman's address, entitled "Dermatitis Due to Woods."

Drs. Louis A. Brunsting and Daisy G. Simonsen, Rochester, Minn., presented a paper on "Cutaneous Ulcers Treated by the Sulphydryl Containing Amino Acid Cysteine." Discussed by Drs. Joseph V. Klauder, Philadelphia; John H. Stokes, Philadelphia; M. F. Engman, Jr., St. Louis, and Louis A. Brunsting, Rochester, Minn.

Dr. Adolph B. Loveman, Ann Arbor, Mich., read a paper on "Experimental Aspects of Fixed Allonal Eruption." Discussed by Drs. Samuel M. Peck, New York; Marion B. Sulzberger, New York; James Herbert Mitchell, Chicago; Walter J. Highman, New York; W. U. Rutledge, Louisville, Ky.; George Miller MacKee, New York, and Adolph B. Loveman, Ann Arbor, Mich.

Drs. George C. Andrews, Frederick W. Birkman and Richard J. Kelly, New York, presented a paper on "Recalcitrant Pustular Eruptions of the Palms and Soles." Discussed by Drs. James Herbert Mitchell, Chicago; George Miller MacKee, New York; Marion B. Sulzberger, New York; Theodore Cornbleet, Chicago; Walter J. Highman, New York; Samuel Ayres, Los Angeles; C. Ferd Lehmann, San Antonio, Texas; M. F. Engman, Jr., St. Louis; Samuel M. Peck, New York; Fred D. Weidman, Philadelphia; C. Guy Lane, Boston; Clark W. Finnerud, Chicago, and George C. Andrews, New York.

Drs. Jeffrey C. Michael and Henry O. Nicholas, Houston, Texas, presented a paper on "The Blood Lipids in Xanthoma." Discussed by Drs. Fred D. Weidman, Philadelphia; Walter J. Highman, New York, and Jeffrey C. Michael, Houston, Texas.

Drs. Max S. Wien and Marcus R. Caro, Chicago, presented a paper on "Traumatic Epithelial Cysts of the Skin." Discussed by Drs. Walter J. Highman, New York; M. J. Strauss, New Haven, Conn.; William A. Rosenberg, Chicago, and Marcus R. Caro, Chicago.

Dr. Marion B. Sulzberger, New York, read a paper on "Recent Immunologic Studies in Tobacco Hypersensitivity." Discussed by Drs. George Miller MacKee, New York; William Allen Pusey, Chicago; Walter J. Highman, New York; Paul A. O'Leary, Rochester, Minn.; W. U. Rutledge, Louisville, Ky., and Marion B. Sulzberger, New York.

THURSDAY, JUNE 15—AFTERNOON

The chairman announced that the collection on Wednesday for the Scientific Exhibit amounted to approximately \$150, which would take care of the exhibit for probably two years, and stated that any one present who had not yet contributed would be allowed that privilege at this time.

The Executive Committee reported the following nominations for officers of the section for the ensuing year: Chairman, Dr. C. Guy Lane, Boston; vice chairman, Dr. Charles C. Tomlinson, Omaha; secretary, Dr. Harry R. Foerster, Milwaukee. Nominations from the floor were called for but none were made.

Drs. Isadore Rosen, Frances Krasnow and Morris A. Lyons, New York, presented a paper on "The Lipid Partition and the Albumin-Globulin Ratio in Syphilis." Discussed by Drs. A. W. Stillians, Chicago; Theodore Cornbleet, Chicago, and Isadore Rosen, New York.

Drs. S. William Becker and M. E. Obermayer, Chicago, presented a paper on "Clinical Observations on a New Arsenical Synthetic in the Treatment of Syphilis." Discussed by Dr. John H. Stokes, Philadelphia; Chauncey D. Leake, Ph.D., San Francisco; George W. Raiziss, Ph.D., Philadelphia, and Dr. S. William Becker, Chicago.

Dr. Leo Spiegel, New York, read a paper on "Treatment of Neurosyphilis with Acetarson Given Intravenously." Discussed by Drs. Carroll S. Wright, Philadelphia; Samuel Ayres, Los Angeles, and Leo Spiegel, New York.

Drs. C. J. Lunsford, Oakland, Calif., and P. W. Day, Reprisa, Calif., presented a paper on "Experimental Inguinal Gland Transference in Human Syphilis: A Biologic Study." Discussed by Drs. M. F. Engman, Jr., St. Louis; J. Gardner Hopkins, New York, and P. W. Day, Reprisa, Calif.

Drs. J. R. Driver and Henry C. Shaw, Cleveland, presented a paper on "Divided Doses of Typhoid Vaccine in the Fever Therapy of Neurosyphilis." Discussed by Drs. Paul A. O'Leary,

Rochester, Minn.; M. O. Nelson, Tulsa, Okla.; Louis A. Brunsting, Rochester, Minn., and J. R. Driver, Cleveland.

Dr. A. Benson Cannon, New York, read a paper on "The Value of Silver Arspenamine in the Treatment of Early Syphilis: Conclusions Based on a Study of One Hundred Cases." Discussed by Drs. Earl D. Osborne, Buffalo, and A. Benson Cannon, New York.

Drs. Dudley C. Smith and William A. Brumfield, Jr., University, Va., presented a paper on "Tracing the Transmission of Syphilis: An Epidemiologic Study." Discussed by Drs. Thomas Parran, Jr., Albany, N. Y., and Dudley C. Smith, University, Va.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. C. Guy Lane, Boston; vice chairman, Dr. Charles C. Tomlinson, Omaha; secretary, Dr. Harry R. Foerster, Milwaukee.

Drs. Charles C. Tomlinson and Paul M. Bancroft, Omaha, presented a paper on "Granuloma Coccidioides—Further Observations on the Use of Antimony and Potassium Tartrate and Roentgen Therapy in Treatment: Report of an Additional Case." Discussed by Drs. George M. Lewis, New York; E. P. Zeisler, Chicago; Howard Morrow, San Francisco; Fred D. Weidman, Philadelphia, and Charles C. Tomlinson, Omaha.

Dr. John F. Madden, St. Paul, read a paper on "Generalized Angiomatosis with Particular Reference to Hereditary Hemorrhagic Telangiectasis." Discussed by Drs. Michael H. Ebert, Chicago; S. William Becker, Chicago; Samuel M. Peck, New York; James Herbert Mitchell, Chicago; Fred D. Weidman, Philadelphia, and John F. Madden, St. Paul.

Drs. Donald M. Pillsbury and George V. Kulchar, Philadelphia, presented a paper on "The Dextrose and Water Content of Normal Inflammatory Skin." Discussed by Drs. S. William Becker, Chicago; Jeffrey C. Michael, Houston, Texas, and Donald M. Pillsbury, Philadelphia.

Drs. Ethel M. Rockwood and Arthur M. Greenwood, Boston, presented a paper on "A Fatal Case of Monilial Infection of the Skin." Discussed by Drs. Cleveland J. White, Chicago; Marion B. Sulzberger, New York; George C. Andrews, New York; James Herbert Mitchell, Chicago; Everett S. Lain, Oklahoma City; Fred D. Weidman, Philadelphia, and Arthur M. Greenwood, Boston.

Drs. J. Gardner Hopkins and Beatrice M. Kesten, New York, presented a paper on "Food Ezeema." Discussed by Drs. Albert H. Rowe, Oakland, Calif.; Marion B. Sulzberger, New York; Cleveland J. White, Chicago; Louis A. Brunsting, Rochester, Minn.; Samuel Ayres, Los Angeles, and J. Gardner Hopkins, New York.

Drs. Henry E. Michelson and L. H. Winer, Minneapolis, presented a paper on "Tuberculosis of the Face." Discussed by Drs. Marion B. Sulzberger, New York; Michael H. Ebert, Chicago, and Henry E. Michelson, Minneapolis.

Dr. Paul E. Bechet, New York, read a paper on "Excessive Solar and Phototherapeutic Radiation as a Causative Factor in Certain Diseases of the Skin." Discussed by Drs. Elmore B. Tauber, Cincinnati, and Paul E. Bechet, New York.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. J. N. Baker, Montgomery, Ala.

The following papers were read as a symposium on silicosis: Dr. A. J. Lanza, New York: "The Etiology of Silicosis." Discussed by Dr. Emery R. Hayhurst, Columbus, Ohio.

Dr. R. R. Sayers, Washington, D. C.: "The Clinical Manifestations of Silicosis." Discussed by Dr. Benjamin Goldberg, Chicago.

Dr. Henry K. Pancoast, Philadelphia: "The Roentgenologic Aspect of Pneumoconiosis and Its Differential Diagnosis." Discussed by Dr. E. P. Pendergrass, Philadelphia.

In the absence of Dr. Leroy U. Gardner, Saranac Lake, N. Y., due to illness, Dr. Richard H. Jaffe, Chicago, discussed "The Pathologic Reaction in Various Pneumoconioses."

Dr. William D. McNally, Chicago: "The Silicon Dioxide Content of Lungs in Health and in Disease."

Mr. Joseph Padway, attorney, Milwaukee, addressed the meeting on the subject of "The Legal Aspects of Silicosis."

The chairman appointed as a nominating committee Drs. A. J. Lanza, New York; Thomas Parran, Jr., Albany, N. Y., and J. C. Geiger, San Francisco.

The symposium on silicosis was discussed by Drs. Robert T. Legge, Berkeley, Calif.; J. J. Singer, St. Louis; C. F. N. Schram, Beloit, Wis.; A. J. Lanza, New York; R. R. Sayers, Washington, D. C.; Henry K. Pancoast, Philadelphia, and William D. McNally, Chicago.

THURSDAY, JUNE 15—MORNING

It was voted to nominate the following for Associate Fellowship: Dr. Robert Alexander Herring, Washington, D. C., and Mr. George A. Soper, Great Neck, N. Y.

Dr. J. N. Baker, Montgomery, Ala., read the chairman's address, entitled "The Rural Tuberculosis Problem in the South."

Dr. W. H. Perkins, New Orleans, read a paper on "Teaching Preventive Practice to Students of Medicine." Discussed by Drs. M. E. Barnes, Iowa City; Fred J. Wampler, Richmond, Va.; J. V. Greenebaum, Cincinnati, and W. H. Perkins, New Orleans.

Dr. Thomas Parran, Jr., Albany, N. Y., read a paper on "Public Medical Care in New York State." Discussed by Drs. W. H. Ross, Brentwood, N. Y.; Nathan B. Van Etten, New York, and Thomas Parran, Jr., Albany, N. Y.

Dr. Thomas B. Magath, Rochester, Minn., read a paper on "The Relation of Diphylobothrium Latum Infestation to the Public Health." Discussed by Drs. Moses Barron, Minneapolis; M. W. Lyon, Jr., South Bend, Ind.; Thomas Myers, St. Paul; W. S. Leathers, Nashville, Tenn., and Thomas B. Magath, Rochester, Minn.

Drs. W. V. Evans and H. H. Rowley, Evanston, Ill., presented a paper on "Spray Residue Poisoning." Discussed by Dr. J. C. Geiger, San Francisco; Mr. J. O. Clarke, Chicago, and Drs. M. E. Barnes, Iowa City; W. S. Leathers, Nashville, Tenn., and W. V. Evans, Evanston, Ill.

Dr. Louis Schwartz, New York, read a paper on "Dermatitis in the Rubber Industry." Discussed by Drs. Earl D. Osborne, Buffalo; John G. Downing, Boston, and Louis Schwartz, New York.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. W. G. Smillie, Boston; vice chairman, Dr. John P. Koehler, Milwaukee; secretary, Dr. R. R. Sayers, Washington, D. C.; delegate, Dr. Stanley H. Osborne, Hartford, Conn.

On motion of Dr. Robert T. Legge, Berkeley, Calif., the following resolution, presented by Dr. William F. Snow, New York, was adopted:

I respectfully present the following resolution for consideration, in view of the fact that the Conference of State and Provincial Health Authorities of North America, the American Social Hygiene Association, the National Society for the Prevention of Blindness, and other agencies have recently voiced their desire to assist in concerted action to promote public interest in the prevention of congenital syphilis.

I understand that the Sections of the American Medical Association on Obstetrics, Gynecology and Abdominal Surgery, on Dermatology and Syphilology, on Pediatrics, and on Ophthalmology are considering similar actions in order to show how generally the medical profession is concerned with the cooperation of all agencies in solving this public health and welfare problem.

WHEREAS, Congenital syphilis is responsible for so much morbidity and mortality among children; and

WHEREAS, Early and effective treatment of infected pregnant women would have prevented this disease in these children in as high as 90 per cent of the cases, in addition to bringing syphilis under control in the mothers; and

WHEREAS, The diagnosis, treatment and after-care involved are no longer prohibitive in expense or time required of either the doctor or patient; be it

Resolved, That the Section on Preventive and Industrial Medicine and Public Health recommend to all agencies and individuals in a position to help, participation in promoting popular understanding and application of modern knowledge to the reduction of congenital syphilis; and be it further

Resolved, That blood examinations, including tests for syphilis, be urged for every pregnant woman at the beginning of her pregnancy.

Drs. Gaylord W. Anderson and Roderick Heffron, Boston, presented a paper on "Two Years of the Massachusetts Pneumonia Program."

Dr. Wilson G. Smillie, Boston, read a paper on "The Epidemiology of Lobar Pneumonia."

Dr. W. D. Sutliff, Boston, read a paper on "The Distribution of the Newly Classified Serologic Types of Pneumococci in Disease."

These three papers were discussed by Drs. H. A. Reimann, Minneapolis; William H. Park, New York; Maxwell Finland, Boston; M. E. Barnes, Iowa City; Gaylord W. Anderson, Boston; Wilson G. Smillie, Boston, and W. D. Sutliff, Boston.

Dr. James A. Crabtree, Nashville, Tenn., read a paper on "Tuberculosis Studies in Tennessee: Tuberculosis in the Negro as Related to Certain Conditions of Environment." Discussed by Drs. J. A. Myers, Minneapolis; John Ritter, Miami, Fla.; O. O. Miller, Louisville, Ky., and James A. Crabtree, Nashville, Tenn.

Dr. C. St. C. Guild, New York, read a paper on "Tuberculosis Among Negroes: A Discussion of the Major Problems That Complicate Its Control." Discussed by Drs. Horton R. Casparis, Nashville, Tenn.; Marie Pichel Levinson, New York; Emil Bogen, Olive View, Calif., and C. St. C. Guild, New York.

Dr. J. C. Geiger, San Francisco, read a paper on "Food Poisoning: A Report of Three Outbreaks." Discussed by Drs. John P. Kochler, Milwaukee, and J. C. Geiger, San Francisco.

SECTION ON UROLOGY

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. N. G. Alcock, Iowa City.

The following papers were read as a symposium on "Excretion Urography":

Dr. W. F. Braasch, Rochester, Minn.: "The Practical Application of Intravenous Urography."

Dr. Moses Swick, New York: "Excretion Urography with Particular Reference to a New Compound, Sodium Iodohipurate."

These two papers were discussed by Drs. Ira R. Sisk, Madison, Wis.; L. T. Le Wald, New York; Thomas D. Moore, Memphis, Tenn.; W. F. Braasch, Rochester, Minn., and Moses Swick, New York.

The chairman appointed Dr. Hermon C. Bumpus, Rochester, Minn., to serve on the executive committee in the place of Dr. J. D. Barney, Boston, who was unavoidably absent.

The chairman stated that Dr. Maximilian Stern, De Land, Fla., was unable to be present to read his paper on Thursday morning, and that with the unanimous consent of the section a paper by Dr. John R. Caulk, St. Louis, could be substituted.

On motion, regularly seconded and carried, it was voted that Dr. Caulk be allowed to present his paper.

Dr. Robert H. Herbst, Chicago, read a paper on "Urography as a Guide to the Surgical Indications in Diverticula of the Urinary Bladder."

Dr. R. B. Henline, New York, read a paper on "Traumatic Injuries of the Urinary Tract: Comparative Value of Intravenous Urography and Pyelography—Diagnosis and Treatment."

These two papers were discussed by Drs. Miley B. Wesson, San Francisco; Thomas D. Moore, Memphis, Tenn.; W. E. Stevens, San Francisco; O. S. Lowsley, New York; Robert Gutierrez, New York; J. S. Eisenstaedt, Chicago; P. E. McGown, Indianapolis; Robert H. Herbst, Chicago, and R. B. Henline, New York.

Dr. Charles M. McKenna, Chicago, read a paper on "The Routine Use of Iopax in Suspected Injuries to the Kidney, Bladder and Other Urinary Organs." Discussed by Drs. G. H. Ewell, Madison, Wis.; Moses Swick, New York; A. I. Folsom, Dallas, Texas, and Charles M. McKenna, Chicago.

Drs. J. A. Hyams, New York; H. R. Kenyon, Cedarhurst, N. Y., and S. E. Kramer, Perth Amboy, N. J., presented a paper on "Urethrocytography as a Routine Diagnostic Measure in Urologic Examinations." Discussed by Drs. M. A. Nicholson, Duluth, Minn.; Robert Gutierrez, New York; Harry P. Lee, Iowa City; N. G. Alcock, Iowa City, and J. A. Hyams, New York.

THURSDAY, JUNE 15—MORNING

The following papers were read as a symposium on "Transurethral Resection and Prostatic Surgery":

Dr. N. G. Alcock, Iowa City: "A Comparison of Immediate Results in Two Equal Consecutive Series of Cases of Prostatic Resection and Surgical Prostatectomy: Chairman's Address."

Drs. Leon Herman and L. B. Greene, Philadelphia: "A Clinical Consideration of Transurethral Resection with Analyses and Studies of Results."

Drs. W. E. Lower and W. J. Engel, Cleveland: "Individualizing the Prostatic Patient in the Selection of Treatment."

These three papers were discussed by Drs. Hermon C. Bumpus, Rochester, Minn.; A. I. Folsom, Dallas, Texas; Irvin S. Koll, Chicago; Herman L. Kretschmer, Chicago; H. W. E. Walther, New Orleans; W. J. Engel, Cleveland, and N. G. Alcock, Iowa City.

Dr. O. S. Lowsley, New York, read a paper on "A Review of the Prostatic Problem Based on Developments of the Past Three Years in This Field of Surgery." Discussed by Drs. Omar F. Elder, Atlanta, Ga.; J. R. Dillon, San Francisco; A. I. Folsom, Dallas, Texas; N. G. Alcock, Iowa City, and O. S. Lowsley, New York.

Dr. John R. Caulk, St. Louis, read a paper on "The Influence of the Type of Current on the Postoperative Complications in Transurethral Surgery."

Dr. C. W. Collings, New York, read a paper on "The Removal of Tissue at the Bladder Neck for the Relief of Prostatic Obstruction."

These two papers were discussed by Drs. F. E. B. Foley, St. Paul; T. J. Kirwin, New York; C. H. deT. Shivers, Atlantic City, N. J.; Abraham Ravich, Brooklyn; John R. Caulk, St. Louis, and C. W. Collings, New York.

Drs. W. N. Wishard, Jr., H. G. Hamer and H. O. Mertz, Indianapolis, presented a paper on "A Presentation of a Method for Local Infiltration Anesthesia of the Prostate Preliminary to Prostatic Resection." Discussed by Drs. G. J. Thompson, Rochester, Minn.; H. M. Stang, Eau Claire, Wis.; Julius Frischer, Kansas City, Mo.; George H. Ewell, Madison, Wis.; J. A. Hyams, New York, and W. N. Wishard, Jr., Indianapolis.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. Harry Culver, Chicago; vice chairman, Dr. W. M. Kearns, Milwaukee; secretary, Dr. J. H. Morrissey, New York; delegate, Dr. H. W. E. Walther, New Orleans; alternate, Dr. Henry L. Sanford, Cleveland.

The following papers were read as a symposium on "The Pyelitis of Pregnancy":

Drs. N. S. Heaney, H. L. Kretschmer and E. A. Ockuly, Chicago: "A Pyelographic Study of the Effects of Pregnancy on the Kidneys and Ureters."

Dr. E. M. Randall, Rochester, Minn.: "The Postpartum Bladder."

These two papers were discussed by Drs. F. H. Falls, Chicago; Vincent J. O'Connor, Chicago; William E. Stevens, San Francisco; W. E. Heller, Fargo, N. D.; G. C. Prather, Boston; N. S. Heaney, Chicago, and L. M. Randall, Rochester, Minn.

Dr. E. G. Crabtree, Boston, read a paper on "The Relation of Pregnancy Changes and Infections to Recurrence of Infection in Subsequent Pregnancies."

Dr. H. W. E. Walther, New Orleans, read a paper on "Postpartal Pyelonephritis."

These two papers were discussed by Drs. A. I. Folsom, Dallas, Texas; G. C. Prather, Boston; Anson L. Clark, Rochester, Minn.; J. I. Hoffbauer, Baltimore; E. G. Crabtree, Boston, and H. W. E. Walther, New Orleans.

Dr. H. D. Furniss, New York, read a paper on "Pyelitis and Pyelonephritis in Pregnancy—Studies with Reference to the Persistence of Symptoms Following Delivery. Treatment: Indications and Results."

Dr. D. K. Rose, St. Louis, read a paper on "Treatment of Certain Cases of Pyelitis of Pregnancy Without the Use of the Urethral Catheter."

Dr. Harry P. Lee, Iowa City, read a paper on "The Effect of Pregnancy on the Urinary Tract."

These three papers were discussed by Drs. W. E. Stevens, San Francisco; R. M. Nesbit, Ann Arbor, Mich.; M. W.

Sherwood, Milwaukee; John K. Ormond, Detroit; J. I. Hofbauer, Baltimore; J. S. Lewis, Youngstown, Ohio; F. H. Falls, Chicago; William P. Herbst, Washington, D. C.; Abraham Ravich, Brooklyn; E. G. Crabtree, Boston; G. C. Prather, Boston; W. J. Wallace, Oklahoma City, and Robert Gutierrez, New York.

The chairman stated that the section had had the largest attendance in four years, and extended the thanks of the section to the Milwaukee urologists for their splendid cooperation and hospitality.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. W. Barnett Owen, Louisville, Ky.

Dr. Myron O. Henry, Minneapolis, read a paper on "Intra-capsular Fractures of the Hip: A New Device for Lateral Osteosynthesis." Discussed by Drs. John Hunt Shephard, San Jose, Calif.; Chester C. Schneider, Milwaukee; John W. Powers, Milwaukee; W. B. Carrell, Dallas, Texas; Laurence Jones, Kansas City, Mo., and Myron O. Henry, Minneapolis.

Dr. Garry de N. Hough, Jr., Springfield, Mass., read a paper on "Epinephrine and Pilocarpine in the Treatment of Progressive Pseudohypertrophic Muscular Dystrophy." Discussed by Drs. Arthur Steindler, Iowa City; H. B. Thomas, Chicago; Philip Lewin, Chicago, and Garry de N. Hough, Jr., Springfield, Mass.

Dr. Henry W. Meyerding, Rochester, Minn., and Dr. R. J. Mroz, Rockford, Ill., read a paper on "Tuberculosis of the Greater Trochanter." Discussed by Drs. Frederick C. Kidner, Detroit; C. A. Stone, St. Louis; Arthur Steindler, Iowa City, and Henry W. Meyerding, Rochester, Minn.

Dr. W. R. MacAusland, Boston, read a paper on "Knee Joint Arthroplasty."

Dr. Fred H. Albee, New York, read a paper on "Original Features of Arthroplasty of the Hip and Knee."

These two papers were discussed by Drs. W. Barnett Owen, Louisville, Ky.; J. S. Speed, Memphis, Tenn.; Edwin W. Ryerson, Chicago; Fred H. Albee, New York, and W. R. MacAusland, Boston.

Dr. Burt G. Chollet, Toledo, Ohio, read a paper on "Relapsed or Resistant Club Feet of Early Childhood." Discussed by Drs. Harold A. Soffield and Frank G. Murphy, Chicago, and Dr. Burt G. Chollet, Toledo, Ohio.

Drs. George A. Williamson and Wallace H. Cole, St. Paul, presented a paper on "Chronic Recurrent Dislocation of the Patella." Discussed by Drs. Herman C. Schumm, Milwaukee; Paul W. Giessler, Minneapolis; James A. Dickson, Cleveland; Edwin W. Ryerson, Chicago; Fred H. Albee, New York; C. A. Stone, St. Louis; H. E. Cooper, Peoria, Ill., and George A. Williamson, St. Paul.

THURSDAY, JUNE 15—MORNING

Dr. J. Warren White, Greenville, S. C., read a paper on "Use of Autogenous Bone Pin Through Acromion into Humeral Head in Shoulder Arthrodeses." Discussed by Drs. Robert E. Burns, Madison, Wis., and Emil D. W. Hauser, Chicago.

Dr. Paul N. Jepson, Philadelphia, read a paper on "Traumatic Backache."

Dr. Ralph K. Ghormley, Rochester, Minn., read a paper on "Low Back Pain with Especial Reference to the Importance of the Articular Facets."

These two papers were discussed by Drs. Henry W. Meyerding, Rochester, Minn.; Robert B. Osgood, Boston; Lewis Clark Wagner, New York; Paul N. Jepson, Philadelphia, and Ralph K. Ghormley, Rochester, Minn.

Dr. W. Barnett Owen, Louisville, Ky., read the chairman's address, entitled "Ununited Fractures of the Shaft of the Humerus."

Dr. Marion N. Gibbons, Cleveland, read a paper on "Roentgenographic Observations on the Course of Aberrant Ossification in the Foot." Discussed by Drs. Arthur Steindler, Iowa City; R. Plato Schwartz, Rochester, N. Y.; Marcus H. Hobart, Evanston, Ill.; J. S. Speed, Memphis, Tenn., and Marion N. Gibbons, Cleveland.

Dr. Frederick C. Kidner, Detroit, read a paper on "Pre-hallux as a Cause of Flatfoot: Operative Correction." Dis-

cussed by Drs. Charles W. Peabody, Detroit; Edwin W. Ryerson, Chicago, and Frederick C. Kidner, Detroit.

Dr. Joseph A. Freiberg, Cincinnati, read a paper on "Early Diagnosis and Treatment of Congenital Dislocation of the Hip." Discussed by Drs. John L. Porter, Evanston, Ill.; Ralph K. Ghormley, Rochester, Minn.; W. P. Blount, Milwaukee, and Joseph A. Freiberg, Cincinnati.

FRIDAY, JUNE 16—MORNING

The following officers were elected: chairman, Dr. J. S. Speed, Memphis, Tenn.; vice chairman, Dr. R. D. Schrock, Omaha; delegate, Dr. Henry W. Meyerding, Rochester, Minn.; alternate, Dr. W. Barnett Owen, Louisville, Ky.; secretary, Dr. Fremont A. Chandler, Chicago.

The report of the Committee on Certification of Specialists, read by Dr. Henry W. Meyerding, Rochester, Minn., was adopted and the committee was continued.

Proper memorial resolutions were ordered drawn up concerning the deaths of the following members of the section: Drs. Russell A. Hibbs, New York; Ansel G. Cook, Hartford, Conn.; Emil Geist, Minneapolis; Nathaniel Allison, Chicago, and Edward A. Rich, Tacoma, Wash., also Sir Robert Jones, England.

Dr. W. K. West, Oklahoma City, read a paper on "The Treatment of Fractures of the Shaft of the Tibia and Fibula, Using Skeletal Traction." Discussed by Drs. F. J. Gaenslen, Milwaukee; W. B. Carrell, Dallas, Texas; D. H. Levinthal, Chicago, and W. K. West, Oklahoma City.

Dr. Edwin W. Ryerson, Chicago, read a paper on "Osteotomy for Flexion Deformity at the Hip Due to Anterior Poliomyelitis." Discussed by Drs. J. S. Speed, Memphis, Tenn.; John O. Dieterle, Milwaukee, and Edwin W. Ryerson, Chicago.

Dr. Clay Ray Murray, New York, read a paper on "Fracture Healing: Its Influence on the Choice of Treatment Methods."

Dr. J. Albert Key, St. Louis, read a paper on "The Effect of a Local Calcium Depot on Osteogenesis and Healing of Fractures."

These two papers were discussed by Drs. F. J. Gaenslen, Milwaukee; Edward L. Compere, Chicago; R. D. Schrock, Omaha; Clay Ray Murray, New York, and J. Albert Key, St. Louis.

Dr. H. Winnett Orr, Lincoln, Neb., read a paper on "The Albee Bone Graft and the Winnett Orr Method of Postoperative Care for the Immediate Treatment of Compound Fractures." Discussed by Drs. E. D. McBride, Oklahoma City, and H. Winnett Orr, Lincoln, Neb.

Dr. D. M. Bosworth, New York, read a paper on "Subperiosteal Resection of the Tibial Shaft in Osteomyelitis." Discussed by Drs. D. B. Phemister, Chicago; J. E. M. Thomson, Lincoln, Neb., and D. M. Bosworth, New York.

Dr. Edson B. Fowler, Chicago, read a paper on "Stiff, Painful Shoulders, Exclusive of Tuberculosis and Other Infections." Discussed by Drs. Edwin W. Ryerson, Chicago; F. J. Gaenslen, Milwaukee, and Edson B. Fowler, Chicago.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. Curtice Rosser, Dallas, Texas.

The chairman announced the substitution on the Executive Committee of Dr. Sara M. Jordan, Boston, for Dr. G. B. Eusterman, Rochester, Minn., and Dr. Louis A. Buie, Rochester, Minn., for Dr. Dudley A. Smith, San Francisco.

Dr. Collier F. Martin, Philadelphia, read a paper on "Stricture of the Rectum: Some of Its Problems." Discussed by Drs. Clyde W. Morter, Milwaukee; Herbert T. Hayes, Houston, Texas; A. A. Goldsmith, Chicago; M. H. Streicher, Chicago; E. Jay Clemons, Los Angeles; John L. Jelks, Memphis, Tenn., and Collier F. Martin, Philadelphia.

Dr. Frank G. Yeomans, New York, read a paper on "Management of Advanced Carcinoma of the Gastro-Intestinal Tract." Discussed by Drs. George E. Binkley, New York; Harry H. Bowing, Rochester, Minn.; Louis J. Hirschman, Detroit, and Frank G. Yeomans, New York.

Drs. W. A. Fansler and James Kerr Anderson, Minneapolis, presented a paper on "A Plastic Operation for Certain Types of Hemorrhoids." Discussed by Drs. Clement L. Martin, Chicago; Louis J. Hirschman, Detroit, and W. A. Fansler, Minneapolis.

Drs. James F. Weir and Waltman Walters, Rochester, Minn., presented a paper on "Preoperative and Postoperative Management of Diseases of the Upper Part of the Digestive Tract." Discussed by Drs. Walter L. Palmer, Chicago; Russell L. Haden, Cleveland; Horace W. Soper, St. Louis; Waltman Walters, Rochester, Minn.; R. R. Best, Omaha; A. L. Levin, New Orleans, and Frank Smithies, Chicago.

Dr. Moses Paulson, Baltimore, read a paper on "The Present Status of Chronic Ulcerative Colitis with Special Reference to Etiology." Discussed by Drs. Sara M. Jordan, Boston; Frank Smithies, Chicago; Frank H. Lahey, Boston; M. H. Streicher, Chicago; John L. Jelks, Memphis, Tenn.; Louis A. Buie, Rochester, Minn., and Moses Paulson, Baltimore.

Drs. Louis A. Buie and J. A. Borgen, Rochester, Minn., presented a paper on "Chronic Ulcerative Colitis: Additional Proof of Its Systemic Origin." Discussed by Drs. Horace W. Soper, St. Louis; Benjamin Jablons, New York; E. Jay Clemons, Los Angeles, and Louis A. Buie, Rochester, Minn.

THURSDAY, JUNE 15—AFTERNOON

Dr. Curtice Rosser, Dallas, Texas, read the chairman's address, entitled, "Current Questions in Proctology."

Dr. Albert F. R. Andresen, Brooklyn, read a paper on "Migraine—An Allergic Phenomenon." Discussed by Drs. Albert H. Rowe, Oakland, Calif.; Harry B. Wilmer, Philadelphia; Russel S. Boles, Philadelphia; Misch Casper, Louisville, Ky.; C. Ulysses Moore, Portland, Ore., and Albert F. R. Andresen, Brooklyn.

Dr. Walter L. Palmer, Chicago, read a paper on "Fundamental Difficulties in the Treatment of Gastric and Duodenal Ulcer." Discussed by Drs. Sidney A. Portis, Chicago; Clarence F. G. Brown, Chicago; Robert Kapsinow, Lafayette, La.; G. A. Hendon, Louisville, Ky.; Sara M. Jordan, Boston; A. L. Levin, New Orleans, and Walter L. Palmer, Chicago.

Dr. S. Allen Wilkinson, Jr., Boston, read a paper on "Gastric Acidity in Thyroid Dysfunction." Discussed by Drs. Ralph C. Brown, Chicago, and S. Allen Wilkinson, Jr., Boston.

Dr. Seale Harris, Birmingham, Ala., read a paper on "Hyperinsulinism—A Disease Entity: A Résumé of the Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of Spontaneous Insulogenic Hypoglycemia." Discussed by Drs. Russell M. Wilder, Rochester, Minn.; Henry J. John, Cleveland; Géza de Takáts, Chicago, and Seale Harris, Birmingham, Ala.

Dr. Maurice B. Strauss, Boston, read a paper on "The Digestive Tract and Diet in Anemia." Discussed by Drs. Cyrus C. Sturgis, Ann Arbor, Mich., and Maurice B. Strauss, Boston.

Drs. Adolph M. Hutter and William S. Middleton, with the collaboration of Harry Steenbock, Madison, Wis., presented a paper on "Vitamin B Deficiency and the Atrophic Tongue." Discussed by Drs. Frank D. Gorham, St. Louis, and William S. Middleton, Madison, Wis.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. A. F. R. Andresen, Brooklyn; vice chairman, Dr. Walter A. Fansler, Minneapolis; secretary, Dr. H. L. Bockus, Philadelphia; delegate, Dr. Descum C. McKenney, Buffalo; alternate, Dr. Sara M. Jordan, Boston.

The Secretary read the following communication to the section, dated June 13:

The American Proctologic Society respectfully requests that the section name three members to cooperate with a committee already appointed by the society, to wit: Dr. Curtice Rosser, Dallas, Texas, chairman; Dr. Louis A. Buie, Rochester, Minn.; Dr. Frank G. Runyon, Reading, Pa., which complete committee shall keep in contact with the activities of the Council on Medical Specialties in connection with possible certification of proctologists, and report their recommendations to the society and to the section in one year.

CURTICE ROSSER.

President, American Proctologic Association.

On motion of Dr. William A. Swalm, Philadelphia, seconded by Dr. Louis J. Hirschman, Detroit, the following resolution was adopted:

WHEREAS, The American Gastro-Enterological Association and the American Proctologic Society have each appointed committees of three members with power to cooperate with similar committees from this section in the formation of national examining boards in their respective specialties; and

WHEREAS, Each of these societies is the only national organization recognized in its special field and therefore the only organization authorized to assist in the formation of such a board; therefore be it

Resolved, That the retiring chairman of this section and his successor in office shall each appoint a committee of three members in his respective specialty, such committees to have full power to cooperate with the committees of the American Gastro-Enterological Association and the American Proctologic Society above mentioned in the formation of national boards and to act as representatives of this section on such boards when organized.

The chairman appointed the following members in his specialty: Dr. Louis J. Hirschman, Detroit; Dr. W. A. Fansler, Minneapolis, and Dr. Descum C. McKenney, Buffalo.

The following papers were read as a symposium on "Abdominal Pain":

Dr. Emanuel Libman, New York: "Individual Sensitivity to Pain and Radiations of Pain."

Dr. Walter C. Alvarez, Rochester, Minn.: "Mechanism of Abdominal Pain of Visceral Origin."

Dr. F. M. Pottenger, Monrovia, Calif.: "Clinical Aspects of Abdominal Pain of Visceral Origin."

Dr. John Berton Carnett, Philadelphia: "Pain and Tenderness of the Abdominal Wall."

Dr. Louis J. Hirschman, Detroit: "Anorectal Pain and Its Clinical Significance."

These five papers were discussed by Drs. Russell S. Boles, Philadelphia; Burrill B. Crohn, New York; Fred M. Smith, Iowa City; Elmer L. Eggleston, Battle Creek, Mich.; William J. Kerr, San Francisco; Descum C. McKenney, Buffalo; William Bates, Philadelphia; Seale Harris, Birmingham, Ala.; H. L. Bockus, Philadelphia; Emanuel Libman, New York; Walter C. Alvarez, Minneapolis; F. M. Pottenger, Monrovia, Calif.; John Berton Carnett, Philadelphia, and Louis J. Hirschman, Detroit.

On motion of Dr. Elmer L. Eggleston, Battle Creek, Mich., duly seconded, the following motion was adopted:

Those of us who have been so fortunate as to visit the Scientific Exhibition sponsored by this section must recognize that a very great amount of thought and work has been demanded of the committee; therefore, I wish to move that we express our appreciation to Dr. A. H. Aaron, the chairman of this committee, for the satisfactory work accomplished.

SECTION ON RADIOLOGY

WEDNESDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. George W. Grier, Pittsburgh.

Dr. W. E. Chamberlain, Philadelphia, was appointed to serve on the Executive Committee in place of Dr. Arthur W. Erskine, Cedar Rapids, Iowa, who was absent.

Dr. George W. Grier, Pittsburgh, read the chairman's address, entitled "The Role of the Radiologist in the Treatment of Cancer."

Drs. Max Ballin, Plinn F. Morse and William A. Evans, Detroit, presented a paper on "Skeletal Pathology of Endocrine and Metabolic Origin." Discussed by Drs. Edward L. Compere, Chicago; E. R. Witwer, Detroit; Henry K. Pancoast, Philadelphia, and Plinn F. Morse, Detroit.

Drs. Leo G. Rigler and Frederick B. Exner, Minneapolis, presented a paper on "The Latent Period in the Roentgen Diagnosis of Pulmonary Tuberculosis." Discussed by Dr. J. A. Myers, Minneapolis.

Dr. H. Kennon Dunham, Cincinnati, read a paper on "Proper Interpretation of Chest Exposed, with Special Reference to Differential Diagnosis of Pulmonary Tuberculosis." Discussed by Drs. Henry K. Pancoast, Philadelphia, and H. Kennon Dunham, Cincinnati.

Dr. David Steel, Cleveland, read a paper on "The Roentgenologic Diagnosis of Cardiac Aneurysms." Discussed by

Drs. Fred J. Hodges, Ann Arbor, Mich., and David Steel, Cleveland.

Dr. Samuel Brown, Cincinnati, read a paper on "Atypical Forms of Pleurisy: A Roentgenologic Study." Discussed by Drs. Moses Salzer, Cincinnati; Leon T. Le Wald, New York; John W. Pierson, Baltimore; Leo G. Rigler, Minneapolis, and Samuel Brown, Cincinnati.

THURSDAY, JUNE 15—AFTERNOON

Dr. Harold Swanberg, Quincy, Ill., read a paper on "Cholecystographic Study of the Bile Ducts." Discussed by Dr. John W. Pierson, Baltimore.

Dr. Byron H. Jackson, Scranton, Pa., read a paper on "Roentgenologic Observations in Certain Chronic Gastric Conditions Which Are Completely Relieved by a Special Diet." Discussed by Drs. J. William White, Scranton, Pa.; E. P. Pendergrass, Philadelphia; W. E. Chamberlain, Philadelphia; Harry A. Olin, Chicago; E. L. MacQuiddy, Omaha; John T. Murphy, Toledo, Ohio, and Byron H. Jackson, Scranton, Pa.

Dr. E. L. Jenkinson, Chicago, read a paper on "The Importance of the Size of the Stomach and Stoma in Gastro-Enterostomies." Discussed by Drs. B. R. Kirklin, Rochester, Minn., and E. P. Pendergrass, Philadelphia.

Dr. B. R. Kirklin, Rochester, Minn., read a paper on "Persisting Errors in the Technique of Oral Cholecystography: A Procedure Designed to Avoid Them." Discussed by Drs. Walter L. Palmer, Chicago; Adolph Hartung, Chicago; Paul C. Hodges, Chicago; Harry A. Olin, Chicago, and B. R. Kirklin, Rochester, Minn.

Drs. William H. Stewart and H. Earle Illick, New York, presented a paper entitled "Comments on the Roentgen Diagnosis of Carcinoma at the Cardia." Discussed by Drs. B. R. Kirklin, Rochester, Minn.; E. P. Pendergrass, Philadelphia; Maurice I. Kaplan, Chicago; Leo G. Rigler, Minneapolis, and H. Earle Illick, New York.

Drs. Daniel M. Clark and Milton J. Geyman, Santa Barbara, Calif., presented a paper on "Roentgen Evidence of Healing in Duodenal Ulcer." Discussed by Drs. George W. Grier, Pittsburgh; B. R. Kirklin, Rochester, Minn., and Daniel M. Clark, Santa Barbara, Calif.

FRIDAY, JUNE 16—AFTERNOON

The following officers were elected: chairman, Dr. A. U. Desjardins, Rochester, Minn.; vice chairman, Dr. Amédée Granger, New Orleans; secretary, Dr. John T. Murphy, Toledo, Ohio.

Drs. George W. Holmes, Boston; John W. Pierson, Baltimore, and Lyell C. Kinney, San Diego, Calif., were appointed to represent the section on the National Qualifying Board of Radiology.

Dr. A. U. Desjardins, Rochester, Minn., was appointed to serve on the Executive Committee in place of Dr. Henry K. Pancoast, Philadelphia, who was called home.

Dr. Carl L. Gillies, Cedar Rapids, Iowa, read a paper on "Torus Fractures of the Lower Extremity of the Forearm in Children." Discussed by Dr. Paul C. Hodges, Chicago.

Drs. Fred J. Hodges and Carleton B. Peirce, Ann Arbor, Mich., presented a paper on "A Method of Undergraduate Teaching in Clinical Roentgenology." Discussed by Drs. W. E. Chamberlain, Philadelphia, and Fred J. Hodges, Ann Arbor, Mich.

Dr. Douglas Quick, New York, read a paper on "Radiation in Primary Operable Breast Cancer." Discussed by Drs. F. W. O'Brien, Boston; U. V. Portmann, Cleveland, and Douglas Quick, New York.

Dr. A. U. Desjardins, Rochester, Minn., read a paper on "Radiotherapy as a Method of Identifying Certain Varieties of Tumor." Discussed by Drs. Norbert Enzer, Milwaukee, and A. U. Desjardins, Rochester, Minn.

Dr. Albert Soiland, Los Angeles, read a paper on "Comments on the Higher X-Ray Voltages."

Dr. U. V. Portmann, Cleveland, read a paper on "Procedures for the Treatment of Myelogenous Leukemia." Discussed by Drs. A. U. Desjardins, Rochester, Minn., and U. V. Portmann, Cleveland.

Dr. Charles Goosmann, Cincinnati, read a paper on "Some Mistakes in the Microscopic Diagnosis of Tumors." Discussed

by Drs. W. E. Chamberlain, Philadelphia; A. U. Desjardins, Rochester, Minn.; Douglas Quick, New York, and Charles Goosmann, Cincinnati.

SECTION ON MISCELLANEOUS TOPICS

Sessions on Anesthesia

WEDNESDAY, JUNE 14—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. Albert H. Miller, Providence, R. I.

The chairman filled the vacancies on the Executive Committee by appointing Dr. Ralph M. Waters, Madison, Wis., and Dr. John S. Lundy, Rochester, Minn., to take the place of those not present.

Dr. John L. Emmett, Rochester, Minn., read a paper on "Subarachnoid Injections of Procaine: The Quantitative Effects of Clinical Doses on Sensory, Sympathetic and Motor Nerves." Discussed by Drs. Nelson W. Barker, Rochester, Minn.; Frank A. Kelly, Detroit, and John L. Emmett, Rochester, Minn.

Dr. Frank W. Marvin, Boston, read a paper on "The Present Status of Various Spinal Anesthetics and Their Clinical Usefulness." Discussed by Drs. Floyd T. Romberger, La Fayette, Ind.; Frank A. Kelly, Detroit; M. L. Axelrod, Cleveland, and Frank W. Marvin, Boston.

Drs. John S. Lundy, Hiram E. Essex and James W. Kernohan, Rochester, Minn., presented a paper on "Experiments with Anesthetics: IV. Lesions of the Spinal Cord." Discussed by Drs. Hale Haven, Chicago; James W. Kernohan, Rochester, Minn., and Hiram E. Essex, Rochester, Minn.

Dr. Henry S. Ruth, Philadelphia, read a paper on "Diagnostic, Prognostic and Therapeutic Nerve Blocks." Discussed by Drs. Paul G. Flothow, Seattle; Géza de Takáts, Chicago, and Henry S. Ruth, Philadelphia.

Dr. Lincoln S. Sise, Boston, read a paper on "Tribrom-Ethanol. Intratracheal and Regional Anesthesia in Abdominal Operations." Discussed by Drs. Frank H. Lahey, Boston, and Lincoln S. Sise, Boston.

Dr. Paul M. Wood, New York, read a paper on "The Present Status of Preliminary Medication." Discussed by Drs. Willard Bartlett, Jr., St. Louis; M. L. Axelrod, Cleveland; Ralph M. Waters, Madison, Wis., and Paul M. Wood, New York.

THURSDAY, JUNE 15—MORNING

Dr. Albert H. Miller, Providence, R. I., read the chairman's address, entitled "Organization of the Anesthesia Service of the General Hospital."

Drs. S. Goldschmidt, Isidor S. Ravdin, Baldwin Lucke, G. P. Muller and C. G. Johnston, Philadelphia, presented a paper on "Divinyl Ether." Discussed by Drs. Ralph M. Waters, Madison, Wis.; Henry S. Ruth, Philadelphia; Walter Meek, Madison, Wis.; Chauncey D. Leake, San Francisco; Hiram E. Essex, Rochester, Minn.; John S. Lundy, Rochester, Minn.; James G. Poe, Dallas, Texas, and Isidor S. Ravdin, Philadelphia.

Dr. Chauncey D. Leake, San Francisco, read a paper on "The Role of Pharmacology in the Development of Ideal Anesthesia." Discussed by Dr. M. H. Seevers, Madison, Wis.

Dr. Isabella C. Herb, Hubbard Woods, Ill., read a paper on "The Present Status of Ethylene." Discussed by Drs. Arthur Dean Bevan, Chicago, and Isabella C. Herb, Hubbard Woods, Ill.

Dr. Frank J. Murphy, Detroit, read a paper on "The Present Status of Nitrous Oxide, Especially Its Use in Connection with Intratracheal Anesthesia." Discussed by Drs. Carl Henry Davis, Milwaukee; Carl B. Davis, Chicago; Isabella C. Herb, Hubbard Woods, Ill., and James G. Poe, Dallas, Texas.

Dr. James G. Poe, Dallas, Texas, read a paper on "The Use of Carbon Dioxide in Anesthesia." Discussed by Drs. Ralph M. Waters, Madison, Wis.; Paul M. Wood, New York, and James G. Poe, Dallas, Texas.

On motion of Dr. Ralph M. Waters, Madison, Wis., seconded by Dr. Lincoln F. Sise, Boston, the following resolution was adopted:

Resolved, That the secretary address a letter to the secretary of the Council on Scientific Assembly, expressing appreciation of the privilege of holding the sessions on anesthesia in the Section on Miscellaneous Topics and earnestly requesting that the sessions on anesthesia and allied topics be continued at the 1934 session of the American Medical Association.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Milwaukee Session attracted a great deal of interest. Twelve sections of the Scientific Assembly cooperated with group exhibits, with thirty-seven individuals reading papers before sections who also had exhibits on the same subjects in the Scientific Exhibit.

There were four special exhibits authorized by the Board of Trustees:

The exhibit on poliomyelitis, which was a cooperative undertaking by the Committee on Scientific Exhibit with the United States Public Health Service and six sections of the Scientific Assembly, was shown for the second year. The exhibit occupied seven booths, in which demonstrations were given continuously throughout the week. In a space adjoining the exhibit, motion pictures on poliomyelitis were run continuously. The pamphlet distributed last year was revised and rewritten and given out to visitors. The committee in charge of the exhibit consisted of Michael Hoke, Warm Springs, Ga.; James P. Leake, Washington, D. C.; Arthur T. Legg, Boston; William H. Park, New York; John Ruhrah, Baltimore; James D. Trask, New Haven, Conn., and Ralph C. Williams, chairman, Washington, D. C. An advisory committee representing various sections of the Scientific Assembly was composed of the following: Section on Practice of Medicine, Thomas McCrae, Philadelphia; Section on Pediatrics, William P. Lucas, San Francisco; Section on Pathology and Physiology, Ludvig Hektoen, Chicago; Section on Nervous and Mental Diseases, Louis J. Pollock, Chicago; Section on Preventive and Industrial Medicine and Public Health, Albert J. Chesley, Minneapolis; Section on Orthopedic Surgery, Frederick J. Gaenslen, Milwaukee. Demonstrators in charge of different portions of the exhibit included John Ruhrah, Baltimore; S. D. Kramer, Brooklyn; James D. Trask, New Haven; Josephine B. Neal, New York; Jean Macnamara, Melbourne, Australia; Arthur T. Legg, Boston; Michael Hoke, Warm Springs, Ga., and Janet B. Merrill, Boston.

The special exhibit on cancer, continued for the second year, was in charge of a committee composed of Max Cutler, Chicago, R. S. Ferguson, New York, and Frank W. Hartman, chairman, Detroit, assisted by the following demonstrators: Charles J. Sutro, New York; R. S. Ferguson, New York; Grant E. Ward, Baltimore, and Max Cutler, Chicago. A continuous program of motion pictures on cancer was carried on in connection with the exhibit, and a pamphlet printed for the occasion was distributed to visitors.

The special exhibit on circulation of blood in the capillaries was given for the first time this year under the supervision of a committee composed of Gilbert H. Marquardt, Chicago, and Irving Sherwood Wright, New York, chairman, assisted by the following demonstrators: William J. Kerr, Stacy R. Mettier and R. McCalla, all of San Francisco; George E. Brown, Rochester, Minn., and A. Wilbur Duryee, New York. A continuous motion picture program on capillary circulation was run in conjunction with the exhibit. These films were made by Eliot R. Clark, Philadelphia.

The fresh tissue demonstrations, which have been an annual feature of the Scientific Exhibit for many years was presented under the direction of Norbert Enzer, Milwaukee. Prominent pathologists from various parts of the country assisted in the demonstrations of a large amount of necropsy material continuously throughout the week. The following were included among the demonstrators in this exhibit: Norbert Enzer, Otto Saphir and associates of Michael Reese Hospital, Chicago; Richard H. Jaffe and associates of Cook County Hospital, Chicago; B. S. Benjamin, Milwaukee, and John Grill, Milwaukee County Hospital, Milwaukee.

The Section on Practice of Medicine included in its group eight exhibits, one of which received a gold medal and one a certificate of merit. The section sponsored a motion picture program in connection with its exhibit and cooperated in the symposium on industrial medicine and in the special exhibit on poliomyelitis. The committee in charge was composed of James H. Austin, Philadelphia; Eugene S. Kilgore, San Francisco, and L. G. Rowntree, chairman, Philadelphia.

The Section on Obstetrics, Gynecology and Abdominal Surgery, under the direction of a committee composed of Carl Henry Davis, Milwaukee, Norman F. Miller, Ann Arbor, Mich., and E. D. Plass, chairman, Iowa City, sponsored a symposium on female genital cancer.

The Section on Ophthalmology, besides its exhibits, sponsored a motion picture program. The committee in charge was composed of Thomas D. Allen, Chicago; Edward R. Ryan, Milwaukee, and Parker Heath, chairman, Detroit.

The Section on Laryngology, Otology and Rhinology, with a committee consisting of William E. Grove, Milwaukee, Gordon F. Harkness, Davenport, Iowa, and Austin A. Hayden, chairman, Chicago, showed a large number of motion pictures in an area adjoining the exhibits of the section.

The Section on Pediatrics sponsored eight exhibits, to one of which was given a certificate of merit. The section cooperated with the special exhibit on poliomyelitis. The committee in charge consisted of Charles F. McKhann, Boston; M. G. Peterman, Milwaukee, and F. Thomas Mitchell, chairman, Memphis, Tenn.

The Section on Nervous and Mental Diseases, under a committee composed of Earl D. Bond, Philadelphia, Groves B. Smith, Godfrey, Ill., and Thomas J. Heldt, chairman, Detroit, had three exhibits on various topics.

The Section on Dermatology and Syphilology showed twelve exhibits, besides participating in the symposium on the history of dermatology and in the symposium on occupational dermatoses. The latter was a contribution by the section to the symposium on industrial medicine. A certificate of merit was given to one exhibit in this section group. The committee in charge of the exhibits was composed of Clark W. Finnerud, Chicago; Robert L. Gilman, Philadelphia; Hamilton Montgomery, Rochester, Minn.; Lester M. Wieder, Milwaukee, and Fred D. Weidman, chairman, Philadelphia.

The Section on Preventive and Industrial Medicine and Public Health showed three exhibits, to one of which was given a silver medal, besides cooperating in the symposium on industrial medicine and with the special exhibit on poliomyelitis. The committee in charge was composed of Alice Hamilton, Boston; Theodore L. Squier, Milwaukee, and Paul A. Davis, chairman, Akron, Ohio.

The Section on Urology showed nine exhibits, to one of which was given a gold medal. The exhibit was in charge of a committee as follows: F. E. B. Foley, St. Paul; Moses Swick, New York, and R. S. Ferguson, chairman, New York.

The Section on Orthopedic Surgery, with a committee composed of Paul N. Jepson, Philadelphia, J. T. O'Ferrall, New Orleans, Herman C. Schumm, Milwaukee, and E. B. Mumford, chairman, Indianapolis, showed three exhibits, one of which received a bronze medal. The section also cooperated with the special exhibit on poliomyelitis.

The Section on Gastro-Enterology and Proctology had eleven exhibits, besides a motion picture program which was run continuously throughout the week. The committee in charge was composed of A. F. R. Andresen, Brooklyn; W. A. Fansler, Minneapolis, and A. H. Aaron, chairman, Buffalo.

The Section on Radiology, besides cooperating in the symposium on industrial medicine, presented five exhibits. The committee in charge was composed of H. B. Podlasky, Milwaukee; Leroy Sante, St. Louis, and James T. Case, chairman, Chicago.

The symposium on industrial medicine received contributions from the Section on Practice of Medicine, the Section on Dermatology and Syphilology, the Section on Preventive and Industrial Medicine and Public Health and the Section on Radiology. It included six exhibits, to one of which was given a bronze medal.

Besides the four special exhibits and seventy-seven exhibits under the auspices of the various sections of the Scientific Assembly, there were seventeen exhibits of a miscellaneous nature, including pathology, laboratory work and surgery, and twenty-two exhibits in the educational classification, making 120 exhibits in all.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards reported:

CLASS I

[Awards in Class I are made for exhibits of individual investigations, which are judged on the basis of originality and excellence of presentation.]

The gold medal to Moses Swick, Mount Sinai Hospital, New York, for original investigative work on intravenous and oral urograms demonstrating various urologic conditions by means of sodium iodolhippurate, developed by him.

The silver medal to L. F. Badger, United States Public Health Service, Washington, D. C., for original work on the differential diagnosis of Rocky Mountain spotted fever and endemic typhus, both of which occur endemically in some sections of the United States.

The bronze medal to John W. Towey, Powers, Mich., Henry C. Sweany, Chicago, and Willis H. Huron, Iron Mountain, Mich., for original investigations of a form of pneumonitis produced by the spores of a fungus (*Coniosporium corticale*) in maple bark.

Certificates of merit, Class I, were awarded to the following (alphabetically arranged):

J. L. Bollman and F. C. Mann, Mayo Clinic, Rochester, Minn., for exhibit on experimental pathology of the liver.

Ethan Flagg Butler, Chest Clinic, Arnot-Ogden Memorial Hospital, Elmira, N. Y., for exhibit illustrating physiology of respiration with particular reference to the efficiency of pulmonary ventilation and to electrobronchographic studies.

Everett S. Lain, Department of Dermatology and Radiology, Oklahoma University and Lain-Roland Clinic, Oklahoma City, for an exhibit illustrating electrogalvanic lesions of the oral cavity caused by dissimilar metallic dentures.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of George C. Andrews, Frederick W. Birkman and Richard J. Kelly, Vanderbilt Clinic, Columbia University College of Physicians and Surgeons, New York, for excellence in showing recalcitrant pustular eruptions of the palms and soles not due to ringworm.

That of George A. Bennett, Department of Histology, Georgetown Medical School, Washington, D. C., for excellence in showing the effect of thorium dioxide on tuberculosis in guinea-pigs.

That of Paul L. Day, William G. Langston and K. W. Cosgrove, University of Arkansas School of Medicine, Little Rock, Ark., for excellence in demonstrating experimental cataract and other ocular changes from deficiency of vitamin C.

CLASS II

[Awards in Class II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of correlating facts and excellence of presentation.]

The gold medal to Elliott P. Joslin, George F. Baker Clinic, New England Deaconess Hospital, Boston, and Herbert H. Marks, Metropolitan Life Insurance Company, New York, for excellence of presentation of an exhibit illustrating the prevention of diabetes mellitus and certain of its complications.

The silver medal to F. P. McNamara, Finley Hospital Laboratory, Dubuque, Iowa, for excellence of presentation of an exhibit illustrating the activities of the pathologic laboratory in a hundred bed hospital.

The bronze medal to R. Plato Schwartz, Department of Surgery, Division of Orthopedics, University of Rochester School of Medicine and Dentistry, Rochester, N. Y., for excellence of presentation of an exhibit illustrating the electrobasographic methods of recording the gait of man.

Certificates of merit, Class II, to the following (alphabetically arranged):

Charles F. McKhann and Edward C. Vogt, Children's Hospital, Boston, for excellence of presentation of an exhibit illustrating lead poisoning in children.

Francis D. Murphy and John Grill, Marquette University and Milwaukee County Hospital, Milwaukee, for excellence of presentation of an exhibit illustrating various types of nephritis.

P. F. Swindle, Marquette School of Medicine, Milwaukee, for excellence of presentation of an exhibit on angio-architecture of the eye, heart, liver, spleen and skeletal muscles.

In addition, the following exhibits are deemed worthy of honorable mention:

That of Frank J. Heck, Mayo Clinic, Rochester, Minn., for excellence of presentation in showing fundamental changes in blood cells.

That of E. S. Judd and Waltman Walters, Mayo Clinic, Rochester, Minn., for excellence in illustrating surgery of the biliary tract.

That of B. R. Kirklin, Mayo Clinic, Rochester, Minn., for excellence of cholecystographic demonstration of tumors of the gallbladder.

That of C. J. Lundy, Department of Medicine, Rush Medical College, University of Chicago, for excellence in showing the mechanism and electrocardiographic registration of the normal heart beat.

That of Charles Norris, Harrison S. Martland, A. O. Gettler, M. Helpner, B. M. Vance and A. V. St. George, Department of Forensic Medicine, New York University, University and Bellevue Hospital College, and chief medical examiner's office, New York and Essex (Newark) County, N. J., for excellence of presentation of the work of the chief medical examiner's office.

EDUCATIONAL CLASSIFICATION

A special certificate of merit is awarded to the American Social Hygiene Association for an exhibit on the modern conception of gonorrhea.

The Committee on Awards desires to commend the exhibit of the United States Pharmacopeial convention for its interesting exhibit of historical material showing past revisions of the Pharmacopeia. The committee also wishes to emphasize especially the cooperation with the American Medical Association of the government and of various national and local organizations in providing educational exhibits to show the progress of organized activities for the promotion of health and the prevention of disease.

The special exhibits arranged by the twelve sections of the Scientific Assembly have added greatly to the scope and value of the Scientific Exhibit.

The Committee on Awards invites attention to the special exhibits sponsored by the American Medical Association, namely, those on poliomyelitis, circulation of blood in the capillaries, fresh pathology and cancer, and commends particularly those physicians who have assisted in the preparation and in the presentation of these special exhibits. By their participation they are excluded from the opportunity of competing for individual awards which might have been merited by a number of them.

The committee believes that the members and Fellows of the American Medical Association owe a debt of gratitude to the Committee on Scientific Exhibit, to the Advisory Committee and to Dr. Thomas G. Hull, executive in charge, for the present exhibit. The committee cannot commend too highly the appropriate arrangement, general and special, the excellent management, the instructiveness, and the scientific as well as the practical value of the exhibit. Many physicians and investigators, often at great personal sacrifice, have submitted exhibits dealing with various aspects of all the specialties in medicine, prepared by means of modern methods and devices for the visualization of the most recent advances in medicine.

LUDVIG HEKTOEN, Chicago, Chairman.
A. F. R. ANDRESEN, Brooklyn.
H. C. BUMPUS, JR., Rochester, Minn.
THOMAS PARRAN, Albany, N. Y.
R. A. STRONG, New Orleans.

Suprarenal Cortex.—Many studies on the pathology of the suprarenal glands have lent support to the theory advanced forty years ago that the suprarenal cortex detoxifies, probably by its lipids, not only metabolic products but also bacterial toxins, and also protects the organism against bacterial invasion.—Wenner, W. F.: Effect of Extract of the Suprarenal Cortex on Maxillary Sinusitis in the Rabbit, *Arch. Otolaryng.* 17:774 (June) 1933.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

- July 11. Food Advertising Defined.
- July 13. Does Home Canning Pay?

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- July 15. Acne.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Clinical Meeting.—The eighth meeting of the Fort Smith Clinical Society was held at Fort Smith, June 27. In addition to clinics by Drs. Arthur F. Hoge, Jesse E. Stevenson, James W. Amis, Arless A. Blair and Pierre P. Redman, talks were given by the following physicians:

- Frederick H. Krock, Diagnosis of Some Vascular Diseases of the Extremities.
- Sidney J. Wolferrmann, Diagnostic Hints on Intestinal Obstruction.
- Walter G. Eberle, Points in Technique of Office Gynecology.
- Everett C. Moulton, Otorhinological Hazards of Swimming.
- Clarence B. Billingsley, Pyelitis of Pregnancy.
- Curtis H. Kennedy, Free Medicine.
- Ira F. Jones, Uterine Hemorrhage and Its Treatment.
- George E. Knappenberger, Kansas City, Mo., A Plea for More Exact Clinical Diagnosis of Gastro-Intestinal Diseases.

COLORADO

Gift of Books.—Dr. Francis H. McNaught, Denver, recently presented to the library of the Colorado State Medical Society several rare volumes. Included among these were "Some Notes on Midwifery" by Henry Marshall of Scotland, in the author's own handwriting, dated 1790; "A Popular Treatise on the Venereal Diseases," by Robert John Thornton, dated 1815; "Lazari Riverie Opera Medica Omnia," dated 1698, and a book of botanical specimens from Scotland more than 100 years old, collected by the McNaught family.

GEORGIA

Medical Exhibit in Public Library.—A collection of pamphlets, books, instruments, articles of equipment and manuscripts used in the early medical practice of Georgia was on display in the Savannah Public Library, it was reported, May 2. The exhibit was assembled by Dr. Victor H. Bassett, city health officer of Savannah, and includes many articles belonging to the Georgia Medical Society.

Extension Courses.—Emory University School of Medicine, the state medical association and the state board of health are cooperating in a series of summer extension courses throughout the state, the first of which opened, June 19, in Valdosta. Other series opened in Statesboro, June 26, and La Grange, July 3. Subsequent courses will be held in Athens, July 10, and Rome, July 17. Each series runs for one week. The instructors include the following physicians:

- | | |
|------------------------------------|---------------------------------|
| William L. Funkhouser, pediatrics. | Madison H. Roberts, pediatrics. |
| Frank K. Boland, surgery. | Daniel C. Elkin, surgery. |
| Cyrus W. Strickler, medicine. | Stewart R. Roberts, medicine. |
| Frederick G. Hodgson, orthopedics. | Montague L. Boyd, urology. |
| James E. Paulin, Jr., medicine. | Milus K. Bailey, urology. |

The woman's auxiliary of the state medical association sponsored a half hour program preceding each Monday session for wives of physicians.

State Society Awards.—Dr. George Lombard Kelly, professor of anatomy, University of Georgia Medical School, Augusta, was awarded the Crawford W. Long Medal for original research by the Medical Association of Georgia at its recent annual meeting in Macon. At this time it was also announced that Dr. Roy R. Kracke, associate professor of pathology and bacteriology, Emory University School of Medicine, Atlanta, will be the first physician to have his name inscribed on the Lamartine Griffin Hardman Cup. This trophy, donated to the association by former Governor Hardman, bears the following inscription:

Presented to Medical Association of Georgia by Governor Lamartine Griffin Hardman, M.D., B.S., B.A., LL.B., the first physician to be governor of Georgia in over a century, in token of his esteem for the medical profession and the department of health of the state, to be placed in the state treasury for safe-keeping and removed from time to time by the president of the association for the purpose of placing on it, in the judgment of the association, the author, date and achievement of any solution of an outstanding problem of public health or any important discovery in medicine or surgery. May 14, 1931.

Dr. Kracke's research was on diseases of the blood, particularly on agranulocytosis.

IDAHO

Society News.—At a recent meeting of the Nez Perce County Medical Society in Lewiston, speakers included Drs. Peter D. Brink, Pomeroy, on "Lymphatic Leukemia"; Christian H. Koentz, Lapwai, "Primary Tuberculous Infection," and Ralph M. Alley, Lapwai, "Types of Childhood Tuberculosis."

ILLINOIS

Society News.—The Winnebago County Medical Society held a clinic day in conjunction with the staff of St. Anthony's Hospital, Rockford, in May. Clinics were conducted by Drs. Robinson Bosworth, Rockford, on tuberculosis; Max S. Wien, Chicago, skin diseases; Philip H. Kreuscher, Chicago, dry clinic on diseases of the bones and joints, and John A. Volfer, Chicago, surgery. Drs. Theodor Lang and Harold D. Palmer, hospital pathologists, presented an exhibit of pathologic specimens. Dr. Andrew B. Rivers, Rochester, Minn., was guest speaker at the evening meeting following a banquet at the Elks Club, on "The Causes of Vomiting of Blood."

Chicago

Hospital News.—Mrs. Josie Hamburger directed in her will that a pearl necklace should be sold for not less than \$50,000 and the money used for a maternity ward in a hospital to be selected by Dr. Lester E. Frankenthal. If the choice is not made within five years, the fund will go to the Michael Reese Hospital, according to the Chicago Tribune.

Dr. Wilder Honored.—Dr. William H. Wilder was honored at a dinner by the Chicago Ophthalmological Society, June 10. Dr. Wilder is professor emeritus of ophthalmology at Rush Medical College. The eye, ear, nose and throat section of the Illinois State Medical Society held its annual meeting in honor of Dr. Wilder. In addition to personal tributes, a gift was presented to him.

Deaths Due to Trichinosis.—Ten members of a family of eleven were ill and four died recently following an outbreak of trichinosis. The father, employed as a city street sweeper, found a dead hog in an alley in the rear of a restaurant. To test its fitness for food he cooked the liver and ate it. As he suffered no ill effects, he then made sausage, some of which was eaten raw. In a week, one member of the family died. Two children became ill within forty-eight to seventy-two hours after eating the sausage. Trichina spiralis was demonstrated in portions of the hog viscera recovered by inspectors from a vacant lot, and the hospital certificates gave the cause of death as trichinosis. The board of health has not determined how the hog happened to be in the alley.

INDIANA

Personal.—Dr. and Mrs. Frank G. Jackson, Muncie, celebrated their golden wedding anniversary, May 16.—Franklin College, Franklin, conferred the honorary degree of doctor of science on Dr. Carl F. Payne, Franklin, at its annual commencement.

Park to Commemorate Physicians.—A memorial park surrounding Indianapolis City Hospital was dedicated, May 12, in honor of physicians who have gratuitously cared for patients unable to pay. Through the park is to run a trail called "Memory Lane," connecting the city hospital with the James Whitcomb Riley Hospital for Children and other hospitals of the Indiana University Medical Center. A boulder inscribed with a memorial tribute to the medical profession of Indianapolis has been placed near the city hospital. The park project.

which redeems a once desolate area, was planned and carried through by the woman's auxiliary of the Indianapolis Medical Society, with the cooperation of the city park department. The original idea of beautifying the grounds is attributed to Mrs. David Ross, widow of an Indianapolis physician.

Citizens' Committee to Coordinate Agencies.—Dr. Willis D. Gatch, dean, Indiana University School of Medicine, Indianapolis, recently appointed a citizens' committee to coordinate work of various agencies in the field of public health education as a part of the program to extend the activities of the state board of health. The selection of this committee is an extension of the general plan of reorganization of the state board of health, sponsored by Governor McNutt (*THE JOURNAL*, April 22, p. 1262). Dr. Gatch is chairman of the committee, which is composed of representatives of organizations interested in public health work. Members include the following:

George C. Cole, state superintendent of public instruction.
Dr. Joseph H. Weinstein, Terre Haute, president, Indiana State Medical Association.
A. L. Harter, D.D.S., Kokomo, president, Indiana State Dental Association.
Dr. Oscar N. Torian, department of pediatrics of the medical school.
Mrs. Glen Gifford, Tipton, active in work of American Red Cross and Public Health Nurses' Association.
Mrs. W. J. Hockett, Fort Wayne, president, Indiana Congress of Parents and Teachers.
Peter C. Reilly, trustee of the James Whitcomb Riley Hospital for Children.
Robert E. Cavanaugh, director, extension division, Indiana University.
Judge Donald F. Stiver, Goshen, of the American Legion.
Dr. John H. Hare, state director of public health.

The committee on public relations of the Indiana State Medical Association will assist the committee.

MARYLAND

Health Conference on Wheels.—The "healthmobile" of the bureau of child hygiene, state department of health, began a series of child health conferences in southern Maryland and some of the counties on the eastern shore, July 3. The conferences will be under the joint direction of the bureau of child hygiene, the division of oral hygiene and the health officer of each county to be visited.

Personal.—Dr. Hugh H. Young, Baltimore, was recently given the honorary degree of doctor of philosophy by Queen's University, Belfast, Ireland. —Dr. Anthony L. Rettaliata has been appointed full time medical health officer of Baltimore, a position recently created within the Baltimore Health Department. Dr. Rettaliata, in this new capacity, will serve as consultant to practicing physicians in the diagnosis and investigation of communicable diseases. He has been connected with the health department since 1911.

Laboratories Merged.—The consolidation of the laboratories of the Baltimore Health Department was recently announced. C. Leroy Ewing, who was assistant to the late Dr. William Royal Stokes, head of the bureau of bacteriology, is in charge. A bureau of laboratories has also been established as part of the reorganization program in the department, in accordance with a recommendation made by Dr. Joseph W. Mountin, U. S. Public Health Service, following his survey of health and hospital service in Baltimore in 1932.

MASSACHUSETTS

Personal.—Dr. Harvey Cushing, emeritus professor of surgery, Harvard University Medical School, Boston, has been made a foreign member of the Royal Society, London. —Dr. Halbert G. Stetson, Greenfield, retiring president of the Massachusetts Medical Society, was honored, May 19, on his retirement from the Franklin County Public Hospital with a special program attended by 125 friends. Dr. Arthur H. Ellis, Greenfield, presented Dr. Stetson with a set of biographic works by former Senator Albert J. Beveridge of Indiana.

Recommend Abandonment of Health Units.—Radical curtailment of the George Robert White Health Units was recently proposed by the Finance Commission of Boston, on the ground that they are new and nonessential, according to the *New England Journal of Medicine*. This recommendation was contained in a memorandum suggesting a reduction of 10 per cent, or \$75,000, in the expenditures of the Boston Health Department. In referring to the health units, the memorandum says:

Valuable as they may be, the City could continue to function without the White Health Units, without the dental work, without the tuberculosis clinics, without the baby clinics and without any of the lesser functions of the Health Department. They represent services to the citizens of Boston; not essential services of the City as a governmental unit.

The Boston Health League, in a statement sent to the commission, was of the belief that the health units and their major services were essential services, conducted economically. The health units were established through the George Robert White

Fund and presented to the city as educational institutions for the training of the public in health conservation. The first unit was established in 1915, and the seventh, the last, was dedicated, February 24 (*THE JOURNAL*, March 25, p. 977). The commission further recommended a reorganization of the health department for reasons of economy.

MICHIGAN

Children's Fund Suspends Contributions.—The Children's Fund of Michigan has suspended its contributions to the Grand Rapids Child Guidance Clinic because the curtailment of funds was found necessary. Dr. Milton E. Kirkpatrick, director of the clinic since it opened in May, 1931, was to depart, May 1, to accept a position as psychiatrist in the juvenile court at Cleveland.

Cancer Bureau Established.—Transfer of the cancer division of the Detroit Department of Health to the headquarters of the Wayne County Medical Society marks the establishment of a cancer bureau, sponsored jointly by the department of health and the society. With the stimulation of interest in cancer among local members of the medical profession as an objective, the removal is considered as an initial step to concentrate important activities of the society under one roof.

Fifty Years in Practice.—Drs. Walter E. Ward, Owosso, and Jacob S. Shoemaker, New Lathrop, were honored by the Shiawassee County Medical Society with a dinner, recently, in celebration of their completion of fifty years in the practice of medicine. Both physicians graduated from the University of Michigan with the class of 1883. Honorary memberships were conferred on Drs. Ward and Shoemaker, and each was presented with an electric clock. Speakers included Drs. George L. LeFevre, Muskegon, president-elect of the Michigan State Medical Society, and Dr. James D. Bruce, Ann Arbor, a former associate of Dr. Shoemaker. Three former presidents of the state society, Drs. Arthur M. Hume, Owosso, Herbert Randall and Carl F. Moll, Flint, were present.

MINNESOTA

Immunization Campaign.—The Minneapolis health department and the Hennepin County Medical Society are cooperating in an immunization campaign against smallpox and diphtheria. Members of the society are being reimbursed by the city for vaccinations. Cards are provided for purposes of record, free and pay vaccinations being kept separately. Dr. Chester A. Stewart, Minneapolis, president-elect of the medical society, is chairman of the committee on vaccination.

Medal to Dr. Hanson.—A gold medal was awarded to Dr. Adolph M. Hanson, Faribault, by the Minnesota State Medical Association at its recent annual session in Rochester, in recognition of his isolation of the parathyroid hormone. Dr. William J. Mayo, Rochester, presented the medal. In December, 1932, the U. S. Patent Office confirmed Dr. Hanson's claim to the discovery. Dr. Hanson has made the Smithsonian Institution, Washington, D. C., the benefactor of all royalties, for the furtherance of scientific research. Dr. Hanson graduated from Northwestern University Medical School, Chicago, in 1911 and is now engaged in private practice. A gold medal was also awarded to Dr. Ralph V. Ellis and Carl O. Rosendahl, Ph.D., of the University of Minnesota by the Southern Minnesota Medical Society, for their exhibit on causes of hay fever in Minnesota.

MONTANA

Society News.—A special meeting at the tumor clinic of the Murray Hospital, Butte, was held, May 25, with forty physicians from the southwestern part of Montana in attendance; the program consisted of the presentation of cases for diagnosis and results of treatment.

NEW YORK

Personal.—Dr. Christopher G. Parnall, medical director of the Rochester General Hospital, has been appointed commissioner of public welfare, according to newspaper reports. He is a former president of the American Hospital Association. Dr. Harry D. Clough, for several years assistant medical director of the hospital, has been named medical director to succeed Dr. Parnall.

Resolution About Technicians and Nurses as Anesthetists.—At the recent annual meeting of the Medical Society of the State of New York, a resolution was adopted urging that the giving of anesthetics by nurses and lay technicians be discontinued. Declaring that for many years the medical practice act of the state had been interpreted to mean that administering of anesthetics by any persons except licensed physicians

and dentists was illegal, the resolution pointed out that during the past ten years lay technicians have usurped the duties and rights of licensed physicians in this field. The spirit of the law is evaded, it was said, by the technical assumption of responsibility by the surgeon, but in fact the surgeon rarely selects or inquires into the anesthetist's qualifications and does not usually see the patient during the induction of anesthesia. This growing custom is depriving interns and residents of opportunity for instruction in this branch of medicine, yet they are the practitioners of the future who will be called on to assume responsibility for administration of anesthesia. The resolution urged the society to insist on a strict interpretation of the medical practice act and, if the attorney general was of the opinion that the present act does not adequately cover the situation, to institute measures to obtain proper legislation to limit administration of anesthesia to licensed physicians and dentists.

New York City

Personal.—Dr. Florence Rena Sabin of the staff of Rockefeller Institute for Medical Research received the honorary degree of doctor of science at the recent commencement of New York University. —Dr. William Ainslee Goodall was the guest of honor at a banquet, May 6, at the Hotel Astor, celebrating his fiftieth anniversary in the practice of medicine. Dr. Frederick L. Flynn presided and speakers included Drs. Charles Gordon Heyd and John G. William Greeff.

NORTH CAROLINA

Society News.—Dr. Paul H. Ringer, Asheville, addressed the Buncombe County Medical Society, June 5, on hypoglycemia. —Dr. Henry L. Sloan addressed the Mecklenburg County Medical Society, Charlotte, June 6, on 100 consecutive operations for cataract. —Dr. Oliver W. Hill, Knoxville, Tenn., was guest speaker at a meeting of the Tenth District Medical Society at Waynesville, May 17, on "Blood Dyscrasia in Children."

Personal.—Dr. William de Berniere MacNider, Kenan professor of pharmacology, University of North Carolina School of Medicine, Chapel Hill, was awarded the honorary degree of doctor of science at the commencement exercises of the Medical College of Virginia, Richmond, May 30. —Dr. John Peter Munroe, Charlotte, received an honorary degree from Duke University at its summer commencement, and Dr. Thurman D. Kitchin, Wake Forest, was similarly honored by the University of North Carolina.

New Director of State Laboratory.—Dr. John H. Hamilton, director of the division of county health work and epidemiology of the North Carolina State Board of Health since 1931, has been appointed director of the laboratory to succeed the late Dr. Clarence A. Shore. Dr. Hamilton was graduated from Harvard University Medical School in 1916, after which he served as a bacteriologist with the New York State Department of Health and the Iowa State Board of Health and later was on the staff of the Rockefeller Foundation. In 1920 he was made health officer of New Hanover County and the city of Wilmington, where he served until his appointment to the state board staff in 1931. Since January, 1932, he has also been in charge of vital statistics.

OHIO

Society News.—Dr. John A. Caldwell was recently elected president of the Cincinnati Academy of Medicine. —Dr. Henry Kennon Dunham, Cincinnati, addressed the Clinton County Medical Society, Wilmington, June 6, on pulmonary tuberculosis. —The Clark County Medical Society held a clinical meeting at Springfield City Hospital, June 14, followed by the annual outing at Springfield Country Club. —Speakers on the scientific program of the eighth district meeting of the Ohio State Medical Association at Rocky Glen Sanatorium, McConnelsville, June 22, were Drs. Russel G. Means, on "Sinusitis in Relation to Chronic Bronchitis"; Eugene William Masters, "Management of Infections Complicating Diabetes"; Fred Fletcher, "Gynecologic Problems," and Sylvester J. Goodman, "Postpartum Hemorrhage." All speakers were from Columbus. —Drs. William B. Morrison and Robert L. Barnes, Columbus, addressed the Washington County Medical Society, Marietta, June 14, on "Modern Treatment of Benign and Malignant Lesions of the Stomach and Duodenum" and "Recent Advances in Treatment of Arthritis." —Dr. Roy W. Scott, Cleveland, addressed the Montgomery County Medical Society, June 2, on "Management of the Patient with Cardiovascular Disease." —Drs. Edmund C. Mohr and Murray E. Goodrich, Toledo, presented an illustrated lecture on "Diagnosis of Small Lesions of the Uterus and Tubes" before the Williams

County Medical Society, Bryan, in April, and Dr. Stanley D. Giffen, Toledo, spoke on "Vomiting in Infants and Small Children." Physicians of four surrounding counties were guests.

PENNSYLVANIA

Hospital Burned.—Fire caused about \$500,000 damage to the Robert Packer Hospital, Sayre, May 3. The fire is believed to have started from electric wiring in the basement. Two hundred and twenty-three patients were safely removed and within forty-eight hours the hospital was said to be functioning at 50 per cent of its normal capacity. Patients seriously ill were taken to the Tioga General Hospital, Waverly, N. Y., and others were cared for in adjacent buildings.

New Hospital Dedicated at Darby.—Ceremonies dedicating the new Thomas M. and May F. Fitzgerald Mercy Hospital at Darby were held, May 21, with Cardinal Dougherty officiating. The new hospital, eleven stories high, was built at a cost of \$1,250,000 from a fund left by the late Thomas M. Fitzgerald of Landsdowne. Dr. Cornelius T. McCarthy is chairman of the board of trustees which planned the hospital with Mrs. Fitzgerald. It will be managed through the Catholic Diocese of Philadelphia.

Philadelphia

Illegal Practitioners Convicted.—Michael Fiorillo, a naturopath, and Vincenzo Naselli were recently convicted of practicing medicine without a license. Both were placed on probation for one year and were ordered to pay the cost of the prosecution.

Personal.—Charles S. Pitcher resigned as superintendent of Presbyterian Hospital, Philadelphia, June 1. Mr. Pitcher is president-elect of the Protestant Hospital Association. —Dr. McCluney Radcliffe received the honorary degree of doctor of science at the annual commencement, June 9, of Lafayette College, his alma mater.

Jefferson Alumni Meet.—Two days of clinics constituted the program of the annual meeting of the Alumni Association of Jefferson Medical College, May 31-June 1. Among speakers were Drs. P. Brooke Bland, on intracranial injuries of the newborn, Thomas McCrae and Louis H. Clerf, on carcinoma of the lung, and George R. Bancroft, Ph.D., on treatment of cyanide or carbon monoxide poisoning by methylene blue. Dr. Thomas A. Shallow was elected president of the organization.

Preventorium Treatment.—A three year demonstration of the value of preventorium care of children with latent tuberculous infection was begun by the Philadelphia Health Council and Tuberculosis Committee, July 1, when twenty-five children were to be sent to River Crest Preventorium, Mont Clair. The council has requested a score of official and unofficial chest clinics to register all children showing signs of latent tuberculosis. It is planned to send 100 children each year to the preventorium, where the council has assumed maintenance of twenty-five beds. They will remain until they have acquired better health, which it is believed will require about three months. The children are being selected as a result of roentgen examinations in the public schools made through the joint efforts of the board of education, the Henry Phipps Institute and the health council.

TENNESSEE

District Health Departments.—Provision has been made for the formation of district health departments in counties of less than 20,000 population through the combination of two or more contiguous counties and the establishment of a district board of health through the passage of an act in the recent legislature. According to *Health Briefs*, this will provide for fundamental improvement of local health service in the smaller counties of the state and make possible grouping of counties to form a population unit of sufficient size to support an effective organization.

Sectional Society Meetings.—Dr. Charles F. Anderson, Nashville, was elected president of the Middle Tennessee Medical Association at its annual meeting in Woodbury in May. Among others, Dr. Lonnie D. Allen, Smithville, presented a paper on "Medical Practice and Distribution of Doctors in Tennessee"; Dr. Jefferson C. Pennington, Nashville, on "Surgery of Transurethral Resection" and Dr. William T. Robison, Murfreesboro, "Avertin Anesthesia." —Dr. George R. McSwain, Paris, was elected secretary of the West Tennessee Medical and Surgical Association at the annual meeting in Shiloh Park, May 25-26, succeeding his father, the late Dr. Isaac A. McSwain, who served forty years. Among speakers were Drs. William D. Haggard and Carl R. Crutchfield, Nashville.

on "Early Diagnosis of Cancer of the Colon and Rectum," and John Preston Kennedy, Greenwood, Miss., "Radium Therapy in the Treatment of Uterine Hemorrhage of Benign Origin."—Dr. William M. Brown, Livingston, was elected president of the Upper Cumberland Medical Society at its thirty-ninth annual meeting in Red Boiling Springs, June 6-7. Among others, Dr. Louis W. Frank, Louisville, Ky., delivered an address on "Cancer of the Cervix Uteri"; Drs. Oliver W. Hill, Knoxville, on "Blood Dyscrasias in Infants and Young Children"; William D. Haggard, Nashville, "Diagnosis and Surgical Treatment of Cancer of the Rectum"; James S. Campbell, Lebanon, "Gangrene," and Beverly Douglas, Nashville, "Radical Versus Conservative Treatment of Varicose Ulcers of the Leg."

WASHINGTON

Annual Graduate Course.—The University of Washington will present its seventeenth annual course of graduate lectures and clinics for physicians, July 17-21. Lecturers will be Dr. Louis A. Buie, Rochester, Minn., on proctologic subjects; C. Frederic Fluhmann, San Francisco, obstetrics and gynecology; Thomas B. Fletcher, Baltimore, medicine and therapeutics, and Arthur C. Strachauer, Minneapolis, surgery. Six lectures and two clinics will be presented daily, with lectures on nonmedical topics each evening following informal dinners. The fee will be \$10. Since the University of Washington has no medical school, the institution takes this method to bring to the medical profession of the Northwest the latest developments in the different branches of medical science.

Society News.—Dr. Alexander H. Peacock, Seattle, president of the Washington State Medical Association, addressed the King County Medical Society, June 5, on "What the State Medical Association Is Doing for the Community."—Dr. Albert L. Mathieu, Portland, Ore., addressed the Chelan County Medical Society, Wenatchee, in May, on diagnosis in the lower part of the abdomen.—Dr. John N. Alley addressed the Pierce County Medical Society, Tacoma, May 10, on treatment of tuberculosis.—Drs. James Tate Mason and Louis H. Edmunds, Seattle, addressed the Skagit County Medical Society at a recent meeting at Northern State Hospital, Sedro Woolley, on "Problems of Cholecystitis" and "Fractures of the Lower Extremities" respectively. Dr. Pius A. Rohrer, Seattle, demonstrated methods of transurethral prostatic operations.

GENERAL

Society Changes Name.—At the recent annual meeting of the American Association for the Study of the Feeble-Minded, its name was changed to the American Association on Mental Deficiency. Officers elected are Drs. Ransom A. Greene, Waverley, Mass., president; Mary M. Wolfe, Laurelton, Pa., vice president, and Groves Blake Smith, Godfrey, Ill., secretary. The next annual meeting will be held in New York.

Activities of Food Administration.—Seizure of 140 consignments of foods and drugs during May was reported by the federal Food and Drug Administration. Seizures included: adulterated and misbranded livestock remedies; aspirin tablets; proprietary remedies falsely and fraudulently labeled as having remedial values in such diseases as pyorrhea, goiter, rheumatism, acidosis, liver disorders, diabetes, hay fever and deficiency disease; apples carrying residues of poisonous sprays; misbranded butter, oysters and other commodities. Prosecution was recommended in cases involving forty stocks of food, drugs and insecticides. Notification was received from federal courts of nineteen criminal prosecutions during the month, resulting in fines varying from \$5 to \$600.

Dana Medal Awarded.—Dr. William H. Luedde, director of the department of ophthalmology, St. Louis University School of Medicine, was awarded the Leslie Dana Gold Medal, June 19, by the Missouri Association for the Blind in cooperation with the National Society for the Prevention of Blindness. The award is made annually. Lewis H. Carris, director of the national society, said in making the presentation that Dr. Luedde, as director of the prevention of blindness department of the Missouri Commission for the Blind from 1913 to 1926, had been active in developing the movement for saving sight in the state. He is said to have been instrumental in the enactment of legislation for prevention of ophthalmia neonatorum in the state. He has also been director of the prevention of blindness department of the Missouri Association for the Blind.

Reduced Appropriation for Spotted Fever Vaccine.—A protest from Gov. Leslie A. Miller of Wyoming against reduction of appropriations for research by the U. S. Public Health Service on Rocky Mountain spotted fever was presented to the United States Senate, June 14. Senator John B. Kendrick

of Wyoming read to the Senate a letter from Surg. Gen. Hugh S. Cumming in which it was stated that the vaccine for Rocky Mountain spotted fever is already so limited that it has been necessary to deny it to members of the Civilian Conservation Corps and the troops of the U. S. Army in order to reserve it for civilians in areas where the disease is most prevalent and severe. The appropriation for the next fiscal year is \$49,000, compared with a previous \$83,000. No action was taken by Congress to increase the appropriation and future expenditures may depend on recommendation by the director of the budget. it was stated.

Society News.—Dr. Lena K. Sadler, Chicago, was named president-elect of the Medical Women's National Association at the annual meeting in Milwaukee, June 12, and Dr. Mary O'Malley, Washington, D. C., was installed as president. Drs. Mary Louise Small, Baltimore, Eleanor Cushing-Lippitt, Milwaukee, and Louise W. Beamis-Hood, Buffalo, were elected vice presidents, and Dr. Elizabeth A. Kittredge, Washington, D. C., secretary.—Dr. Louis Faugeres Bishop, New York, was elected president of the American Therapeutic Society at its annual meeting in Milwaukee, June 10. Drs. Alpheus F. Jennings, Detroit, Richard J. Behan, Pittsburgh, and Truman G. Schnabel, Philadelphia, were elected vice presidents, and Dr. Oscar B. Hunter, Washington, D. C., secretary, reelected. The society conferred on Dr. Bernard Fantus, Chicago, the honorary degree of doctor of therapeutics; this is said to be the first time the honor has been given to an American.—Dr. Frank J. Broschart, Gaithersburg, Md., was elected president of the Virginia, Maryland and District of Columbia Medical Society at its meeting in Alexandria, Va., May 24: Dr. James A. Gannon, Washington, D. C., is the recording secretary.

Chattahoochee Valley Medical Association.—The thirty-third annual session of the Chattahoochee Valley Medical and Surgical Association will be held at Radium Springs, Albany, Ga., July 11-12, with headquarters at the Casino Building, under the presidency of Dr. Seale Harris, Birmingham, Ala. Physicians included on the program are:

Herbert B. Dowling, Mobile, Ala., Modification of Aschheim-Zondek Test for Early Pregnancy.
William Howard Hailey, Atlanta, Hypertrichosis.
Louie M. Limbaugh, Jacksonville, Fla., Artificial Pneumothorax in Pulmonary Tuberculosis.
Willis P. Jordan, Columbus, Ga., Sedimentation in Urological Conditions.
Adolph E. Drexel, Palatka, Fla., A Urinary Precipitant in the Therapeutics of Asthma.
John C. Patterson, Cuhbert, Ga., Diverticulosis of the Sigmoid.
Nicholas A. Balizell, Marianna, Fla., Appendicitis—Its Management and Treatment with a Plea Toward Reasonable Conservatism in Abscess Cases and Those Involving a Local Peritonitis.
Claude C. McLean, Birmingham, Age Incidence of Climatic Variations in the Manifestations of So-Called Rheumatic Fever in Children.
Henry Mason Smith, Tampa, Role of Alcohol in Therapeutics—in Accidents and in Producing Pathological Drunkenness.
Thomas Harrold, Jr., Macon, Ga., Surgery and Radiation in the Treatment of Cancer of the Mouth.
Leroy H. Oeljen, Leesburg, Fla., Surgical Treatment of Cleft Palate and Harelip.
James F. Alison, Selma, Ala., Carbon Dioxide—Oxygen Inhalations in the Treatment of Pneumonia.

Leprosy Research in the Philippines.—Investigations under the auspices of the Leonard Wood Memorial Foundation for the Eradication of Leprosy will begin during this year with the initiation of research in the Philippine leper colonies by three members of the Advisory Committee of Research. Dr. James A. Doull, professor of hygiene and public health, Western Reserve University School of Medicine, Cleveland, left, March 25, for the Philippines, and Malcolm H. Soule, D.Sc., professor of bacteriology, University of Michigan Medical School, Ann Arbor, and Dr. Frederick P. Gay, professor of bacteriology, Columbia University College of Physicians and Surgeons, and chairman of the committee, are expected to follow shortly. Named in honor of the late Leonard Wood, physician, army officer and governor-general of the Philippines, the memorial has an endowment of \$2,000,000, subscribed through the pledges of 50,000 persons; \$400,000 was expended for a new leprosarium in Cebu and for construction at Culion. These buildings, comprising laboratories, research wards, housing facilities for nurses and scientific personnel, and a cabin cruiser to facilitate transportation, have been completed and handed over to the Philippine government. A medical board, also composed of volunteers, of which Dr. William H. Welch, Baltimore, is chairman, advises on the expenditure of funds. Dr. Herbert W. Wade is medical director of research at Culion. With the aid of the memorial, a journal of leprosy is about to be published by the International Leprosy Association. It was also through the memorial's support that the first international conference on leprosy took place in Manila in 1931.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 10, 1933.

Edinburgh Students Condemn the Medical Curriculum

In view of the recent criticism of the medical curriculum, the students' union of Edinburgh University held an important debate on the subject. Dr. Chalmers Watson, senior physician to the Edinburgh Royal Infirmary, who had been invited to address the meeting, said that in recent discussions there was practical unanimity as to the following defects in the curriculum: (1) excessive time and attention devoted to unnecessary detail in the preliminary subjects—*anatomy, physiology and pathology*—and failure to correlate these subjects adequately with the clinical work; (2) defective appreciation of limitations to the value of teaching by specialists in its relation to the work of the physician; (3) lack of attention to many subjects of great practical importance in preventive medicine. In Edinburgh, 900 hours of the curriculum was devoted to anatomy, whereas the hours devoted to medicine—essentially the life work of the physician—numbered only 450. In Yale, Harvard and other American universities the figures were far different, being 260 and 1,100 hours, respectively. By change of outlook and by teaching the anatomy of the living, as opposed to the minute anatomy of the dead, a saving of 500 hours could be effected with enormous advantage to the student. This changed outlook would bring about other notable changes—the beginning of clinical work in the first, as opposed to the third, year; an increase in the time for physiology, which should be taught much more applied than at present; more attention to practical surgery in the outpatient departments, at the expense of time wasted in the operating theater; special subjects to be taught from the point of view of the general practitioner rather than of the specialist; more tutorial as opposed to mass teaching, and a period of three terms at the end of the curriculum in which the student should be engaged in clinical work, with no further theoretical examinations confronting him. These changes would not involve any extension of the present five-year curriculum.

In the discussion, G. H. Colt, professor of surgery, Aberdeen University, said that one of the things that were demoralizing the medical profession was the number of students who were selected for the medical career by their parents for the social position it would give them. He was prepared to teach in a fortnight all the anatomy any physician was likely to require. Mr. Godfrey of the department of anatomy, Edinburgh University, objected to the belittling of anatomy as a subject for study. The teachers were doing their best to correlate it with surgery and medicine. Another speaker said that on the teaching staff there were too many specialists without practical experience of general practice, who consequently did not know what the student required. After an animated discussion the following resolution was carried by an overwhelming majority: "That this house places on record its opinion that the present system of medical education is unsatisfactory. In its opinion important changes in the curriculum are essential, whereby more facilities for instruction in practical medicine would be available and more assistance given in the principles and practice of preventive medicine. The time required for this additional teaching can be obtained by a judicious modification in the teaching of the earlier scientific subjects, with some revision of the time devoted to the teaching in the special departments of medicine and surgery."

Changes in the Character of Scarlet Fever

The character of scarlet fever has undergone changes which are a complete mystery. In the seventeenth century Sydenham, who has been described as "the English Hippocrates," because

of his eminence as a clinical observer, and who was a great authority on fevers, regarded scarlet fever as trivial disease and even in the early days of the nineteenth century it was so considered. Then it took on a much more dangerous form. From 1890 to 1900 the standardized death rate was 133 per million. Then an extraordinary decline in virulence, for which no explanation can be given, began and the death rate fell to 18 per million in 1929. In 1851 the deaths registered from scarlet fever in England and Wales totaled 13,634; in 1931, when the population was much greater, they totaled only 540. These facts are shown in a report issued by the Medical Research Council entitled "Epidemiological Study of Scarlet Fever," by Miss Hilda M. Woods of the London School of Hygiene and Tropical Medicine. This change of character cannot be attributed to any improvement in hygienic conditions, for it is not accompanied by any corresponding decline in incidence which plausibly might be attributed to these. The mildness of the disease in Sydenham's time also negatives such an explanation. No evidence exists that hospital isolation has played any part in reducing the mortality or that such factors as overcrowding or poor social condition are of any importance. All that can be said is that, like some other diseases, such as influenza, scarlet fever may undergo periodic variation in severity. There is no guarantee that a severe form may not again be reverted to, though justification exists for believing that no sudden change is likely to occur. Exact records as to incidence do not exist before 1911. In that year the attack rate was 2.9 per thousand of population; in 1930 it was 2.76. The death rate has been reduced equally for children and for adults. The downward trend of severity has been fairly steady except for the war years.

The Use of Gas in Preserving Fruit

In 1917 the food investigation board set a team of young men to work in the Cambridge University laboratories on the use of gas in the storage of fruit. The idea was that the control of the constituents of the atmosphere in which fruit is kept might prove as effective as the control of temperature in cold storage and so provide an alternative. The results of atmospheric control have now been published. The apple was chosen as a convenient subject for experiment. It was soon found that apples keep much better in an atmosphere rich in carbon dioxide and poor in oxygen than similar fruit kept in air, but at ordinary temperatures an excess of carbon dioxide injured the fruit, causing patches known as brownheart. The next step was to find the right proportion of the two gases. This is not easy, for while apples themselves are relied on to give off the carbon dioxide required for their own preservation, the more they give off the more quickly is the oxygen in the storage chamber spent and the balance between the two gases upset. To counteract the exhaustion of the oxygen in the atmosphere, controlled ventilation with fresh air was introduced, and another important discovery was made. Up to this stage there had been no control of the temperatures of the atmosphere of the storage chambers, but various developments, of which the self heating of the stored apples was one, led to another major discovery—that the control of the temperature was as essential as the control of the gaseous composition of the atmosphere. It was ultimately found that for an apple very susceptible to injury from low temperature (Bramley's seedling) a mixture of 10 per cent of oxygen and 10 per cent of carbon dioxide at 40 F. gave better results than ordinary cold storage. An immediate result was the construction of stores for the keeping of this apple, and a practical result is that ample supplies are now available at the beginning of May. Though gas storage is only in its infancy, market opinion favors it over cold storage as regards color, flavor and firmness. Moreover, it enables apples to remain fresh during the ordinary process of distribution and marketing.

The application of the principle to other fruits as well as to fish and meat is doubtless only a question of time. It remains

for engineers to work out the practical application of this research work.

Four Hundred and Ninety-Seven Foreign Bodies in the Stomach

The practice of swallowing all sorts of articles by some lunatics is well known, but the discovery of 497 articles, weighing $3\frac{1}{2}$ pounds, in a man's stomach constitutes a record. An inquest was held at the County Mental Hospital, Upton, near Chester, on the body of a farmer, aged 28, who died in hospital following an operation. In his stomach were found 497 articles, which included 200 nails from half an inch to $4\frac{1}{2}$ inches long, 36 staples, 43 phonograph needles, 6 teaspoons, 3 table forks, 7 coins, 6 brace buckles, 3 door keys, 3 penknives, 3 S-shaped meat hooks, 10 safety-pins, 4 sewing needles, 6 ordinary pins, 13 pieces of glass or earthenware and 9 screws. The medical superintendent said that the man had a delusion that his stomach was too smooth. Death was due to ulceration of the stomach and hemorrhage.

The Treatment of Tuberculosis

At the congress of the Royal Institute of Public Health, Sir P. Varrier Jones, who has made the most important recent advance in the treatment of tuberculosis—the village settlement—urged that no treatment would be effective until provision was made not only for the tuberculous patient but for the welfare of his family also. He criticized the system by which "patched-up" patients returning from the sanatorium were sent home to die in the midst of undernourished and poorly housed families whose resistance to disease was low. The sanatorium system was not working because its starting point was that of the well-to-do. It had been forgotten that for the average man three, six or nine months in a sanatorium may mean permanent dislocation of a career. The village settlement was an attempt to compensate for that dislocation. It keeps a man away from the surroundings in which he contracted his disease and offers an opportunity of a new career and of family life in circumstances that do not constitute a danger to wife and children. He urged the value of "the family unit solution, which the almost self-supporting village settlement provides." He also pleaded for more research. The complex of biochemical factors that revealed itself as toxemia really determined the course of the disease. The only factors that really mattered were the action and interaction of the tissue fluids and internal secretions, since it was these which determined the degree of reaction to the tuberculous toxemia. It was already known that automatic healing could occur, and if the reason for its occurrence could be discovered, a way might be found to make an end of tuberculosis.

PARIS

(From Our Regular Correspondent)

May 24, 1933.

Balancing the Budget by Increasing the Saloons

The draft of the national budget as presented to parliament contains an item that has aroused the indignation of all hygienists. Some means must be found to balance the national budget, which shows a deficit of 3,000,000,000 francs (\$144,000,000). The members of the chamber of deputies have not the courage to reduce expenses by lowering the salaries of countless clerks and petty officials; by the reduction of pensions, which have reached an enormous height; by eliminating the waste represented by social insurance—all of them expenditures that were launched during the period of prosperity and from which the beneficiaries will not permit reductions. It appears that the sole interest of the deputy is the promotion of his reelection, even though that is accomplished at the expense of the general welfare. Already the appropriation granted to the ministry of public health has been greatly reduced, and its revenue will be further diminished by the decrease in the

share of the profits paid to the government for racetrack and gambling privileges, as a result of the economic crisis. But a more serious menace threatens the public health. In order to provide new revenues, the government has suggested measures designed to increase the annual income without raising too strong protests. One measure proposed is the licensing of 2,000 new places for the dispensing of alcoholic beverages. The number of such places in France is already large. To this and to the scandalous privilege enjoyed by grape growers of retaining every year, for their own use and without payment of dues, "twenty liters of alcohol," is due the maintenance of alcoholism in France in excess of any other European nation. Sweden and Switzerland, which formerly headed the nations consuming alcoholic beverages, have rapidly dropped below France by simply restricting the number of cabarets. This was brought about in Sweden by the introduction of the famous Gothenburg system. It has never been possible to effect the adoption of the system in France by reason of the tyrannical influence on the members of parliament of the powerful syndicates controlling the sale of alcoholic beverages. In some villages in the North one finds a place for dispensing alcoholic beverages for every five houses. In the new budget, which provides for 2,000 new dispensing places, the government plans to increase its revenue by about 2,000,000 francs (about \$100,000). But the hygienists say that the increase in places dispensing alcohol will increase the number of persons affected with diseases of the liver, kidneys and brain, and also the number of degenerate and tuberculous children for whom the state would have to care in the hospitals, asylums and sanatoriums, at an expense twenty times greater than the additional income the government hopes to secure. In the senate, Justin Godart, formerly minister of public health, vigorously protested against the proposal, presenting arguments in the interest of the public health. He showed that all nations are fighting alcoholism and that France, the country most affected by this type of degeneration, is taking action which will make present conditions worse. The senate and the chamber of deputies nevertheless adopted the plan. The only concession that Mr. Godart was able to secure was that the new dispensing places should be established only in small communes that have no dispensing places. The minister of health lent support to the measure by endeavoring to make it appear that the new drinking places would be a praiseworthy innovation. The protests of the hygienists and of the *Fédération des syndicats médicaux du département de la Seine* could be presented only in the medical journals and in the large reviews. The daily press, being more or less in league with the dealers, owing to important advertising contracts, did not take notice of the event.

The Grand Prix of Monaco

The *grand prix* of 10,000 francs (\$480), established by a legacy of the Prince of Monaco, to be awarded every two years by the Academy of Medicine to a scientist whose career has been characterized by medical discoveries, has been bestowed on Dr. Héricourt, who was the collaborator of Charles Richet in the introduction of serotherapy. Born in 1850, he became at first an army physician; then, from 1885 on, he devoted himself to pure science and became head of the laboratory of the department of physiology at the *Faculté de médecine de Paris*. He sought no further distinction in the scientific hierarchy. After the introduction of serotherapy, he sought to apply it to the treatment of tuberculosis and cancer but without results. He has published several books: *les Frontières de la maladie*, *l'Hygiène moderne*, *les Maladies des sociétés*. He gave up scientific research some time ago. The Academy of Medicine is tending more to award its richest prizes to old men, apparently with the desire of comforting them during the short time that remains in which to enjoy the rewards of tardy good fortune.

BERLIN

(From Our Regular Correspondent)

June 5, 1933.

The Number of Panel Physicians in Germany

In a recent letter (THE JOURNAL, May 13, 1933, p. 1554), a report was given on the number of physicians in Germany. That report can now be supplemented by information on the *Kassenärzte*, or panel physicians, as recently furnished by Dr. Hadrich in the *Ärztliche Mitteilungen*. The two reports supplement each other and reveal no inconsistencies. This new information could be given out owing to the fact that the Reichs-arztregister is now far enough along so that the first results of the census are now available.

Percentage of Panel Physicians

| | Total Number | Panel Physicians |
|----------------------------|-----------------|---------------------|
| Physicians in general..... | 52,000 | 32,152 |
| Specialists* | 15,828 | 10,079 |
| Women physicians | 3,400 | 1,475 |

* The term "specialist" was defined in the THE JOURNAL, Sept. 17, 1932, page 1007.

It is evident that about 60 per cent of the German physicians are engaged in panel practice, whereas approximately 20,000 are not so engaged. About two thirds of the specialists are, at the same time, panel physicians. Of the women physicians, not quite half are in the service of the health insurance societies. In certain regions and provinces in which the number of physicians is small, these average figures are relatively much higher, and in some sections it may happen that nearly all physicians are admitted to panel practice. The distribution of the specialists among the various branches of medicine is not the same among the panel physicians as among the physicians in general, concerning which latter distribution statistics were given in a former letter. Among the panel physicians, the dermatologists present the highest proportion (15.8 per cent). The laryngologists, rhinologists and otologists come next, with 12.9 per cent. The gynecologists are represented by 12.8 per cent, the internists by 12.2 per cent, and the ophthalmologists by 11.7 per cent. Next in order are the pediatricians with 7.8 per cent and the surgeons with 7.0 per cent, to which may be added the specialists for surgery plus diseases of women (4.9 per cent), and the specialists for surgery plus orthopedics (1.6 per cent). The figures for the psychiatrists are 5.6 per cent; diseases of the stomach, 1.7 per cent; diseases of the lungs, 1.6 per cent; orthopedics, 1.4 per cent; roentgenology, 1.2 per cent; urology, 1.2 per cent; diseases of the mouth and jaws, 0.4 per cent, and, finally, disorders affecting the legs, 0.2 per cent.

Of the 3,400 physicians, 2,521 are in charge of a regular practice. Of that number, 1,475 are engaged in panel practice, and 66.6 per cent in general practice. However, the new regulations concerning admission to panel practice will change these percentages to a great extent, so that, after July 1, a new computation will be needed.

Physical Education in Higher Schools of Learning

The Bavarian ministry of public instruction has issued a decree calling attention to the fact that especial importance should be attached to the physical education of the youth. Students in higher institutions of learning must be required to set a good example in this regard. Henceforth, all men students entering on their first semester studies during the summer semester will be required to take part in physical training, with especial emphasis on the art of self-defense, for at least one period weekly during the semester. Students claiming exemption must secure a certificate from the medical director of sport activities, setting forth the reasons for exemption. The execution of this decree rests on the academic institutes for physical training, in cooperation with the student associations.

The executive committee of the league of associations of German medical students has approved in principle the application of the "voluntary work service" for medical students, both men and women. As a precondition, it demands, however, that the time spent in the voluntary work service be applied in full to the three-year period of aid service, which, according to a recent ruling, must precede admission to panel practice, and that, at the conclusion of the voluntary work service, every future medical student be required to serve for several weeks as a nurse.

The Final Decision in the Lübeck Disaster

In several previous letters (THE JOURNAL, Jan. 30, 1932, p. 414; Feb. 13, 1932, p. 566; April 9, 1932, p. 1316; April 16, 1932, p. 1394), information has been given on the measures adopted for the investigation of the multiple deaths of infants in Lübeck, caused by the administration of a virulent culture of tubercle bacilli, and concerning the decisions of the courts. A final decision has now been rendered. The federal supreme court, the court of final jurisdiction, denied, June 1, any further revision of the case. In his plea for revision, Professor Deycke set forth that in reality no tort had been proved. It had been impossible to establish by what concrete process the poisoning of the BCG cultures occurred. The narration of the occurrences sufficed, however, to show that the danger of a confusion of vaccines lay near at hand. The evidence revealed that Professor Deycke entrusted the treatment with the BCG cultures to a nurse who had not had the proper preliminary training for such work, and that thereby the safety of the laboratory was endangered. Furthermore, the behavior of Deycke that established a causal relation with the disaster and his guilt lay in the submission of the vaccine contaminated by the virulent stain. Obermedizinalrat Dr. Altstaedt, a codefendant, had based his plea for a revision on the fact that the judge in the Lübeck trial had had an attack of nervous prostration after the trial, which was followed by his death. To this the supreme court replied that a mental disease had not been proved and appeared highly improbable.

Misleading Food Propaganda

Some time ago, a "committee to prevent misleading food propaganda and false health standards" was formed. Representatives of agriculture, the food products industries and scientific bodies united to combat the adulteration of agricultural products and the contamination of curative agents, food products and articles of luxury. It is not intended to create a new organization but to effect an amalgamation of the various fields of activity and their representatives. Of the many tasks that the committee has assumed may be mentioned publicity campaigns to convince the people of the high grade and excellent quality of German products in general. Attention was called to the fact that great harm is being caused by manifestations of pseudoscience and so-called reform movements of an exaggerated character. In addition to carrying on publicity campaigns, the committee plans to place the needed information before the authorities and to promote such legislation as will control the evils mentioned.

Exchange of Information on Communicable Diseases

An agreement has been reached concerning the exchange of information on communicable diseases along the frontier between Germany and Czechoslovakia. In order that prompt action may be taken to prevent the transmission of disease, a regular exchange of news items concerning diseases of an epidemic character is to be established. The German centers will transmit weekly reports and the centers in Czechoslovakia will send out semimonthly reports, with exact statements as to time and place and the measures that have been adopted to prevent dissemination of disease. The sending of health officers to a stricken area must be announced in advance to the other state, and no significant action may be taken by one state except in the presence of an officer of the other state.

PRAGUE

(From Our Regular Correspondent)

May 27, 1933.

Propedeutic Clinics

Professor Prusik held recently his inaugurating lecture as the new chief of the propedeutic clinic of the Czech faculty of medicine of Prague. The propedeutic clinics have been organized because of a need for a place where students could obtain thorough instruction in diagnostic methods before they enter the different clinical departments of the faculty of medicine. The diversity of complicated diagnostic methods used in the clinical examination today makes it necessary for students to acquire a thorough preliminary knowledge of them, if they are to succeed in the specialized clinics. The need is specially urgent, since the medical faculties are overfilled with students and clinical departments are short of material for demonstration purposes. They cannot slow up the work by demonstrations of elementary diagnostic technic, which can be mastered only through patient and skilful teaching. Propedeutic clinics are still in an experimental stage and the field of activity in relation to other subjects must be worked out.

The Mental Hygiene Movement

The mental hygiene movement in Czechoslovakia is gaining ground slowly. This movement can be traced directly to the stimulus of the Washington world conference on mental hygiene. Following this conference a mental hygiene board was created under the presidency of the minister of health and a monthly periodical was started. A league of mental hygiene was organized, which conducted recently a nationwide mental hygiene week to call the attention of the public to the importance of mental hygiene.

The response shown by the public to this drive seems to have satisfied its organizers.

Report of Committee on Sickness Insurance

The official committee appointed by the ministry of social welfare to draw up a scheme to reform the social insurance system has presented its final report. The committee was called into being because of the unfavorable financial situation in which the sickness insurance funds found themselves. The committee states that the embarrassing situation of the insurance system was mainly caused by the depression and therefore the measures recommended for improving the financial situation can be regarded as transitory. The report did not recommend any curtailment of medical benefits. The economies recommended concern financial benefits. The report tries to eliminate as much as possible the sickness of short duration from the insurance scheme. If the sickness lasts less than four days the insured have no right to any financial support. Up to the present, the financial benefit in case of sickness amounted to two thirds of the average wage. The report recommends decreasing the financial aid to one half of the wage in case of sickness of short duration. This period varies according to the financial strength of the insurance fund. While the sickness insurance bodies are in an unfavorable financial position this does not hold for the invalidity and old age insurance, so the report attempts to place a part of the burden of chronic diseases on the invalidity insurance. The report suggests some administrative changes which might result in economies. No profound changes in the whole system have been recommended by the committee, and it regards the suggested measures as transitory.

Red Cross Conference

A conference of the Central European Societies of the Red Cross was held in Prague in April. Representatives of many nations attended. It was emphasized in the report that the development of nursing in central Europe has progressed so far

that public authorities will have to create a legal background for further growth by making acceptable conditions for nurses working in the hospitals. The Red Cross can open the way for official action. Even the small countries have been successful in this direction. It was pointed out that the best way to improve the working conditions among the nurses is to give them a better education so they can develop for themselves their working conditions within the community. Only a thorough nursing education makes it possible for the home visitor to interpret correctly the situation in the home. The conference was presided over by Dr. A. G. Masaryk, daughter of the president of the republic, and was addressed by Dr. F. Spina on behalf of the Czechoslovakian government.

A Study of Abortions

The results of an investigation on the frequency of abortions in Czechoslovakia was recently presented to a medical audience by Dr. H. Hecht. The report was based on a questionnaire filled out through a direct interview with some thirteen hundred married women. About one third of the questionnaires dealt with women from Greater Prague, the remaining two thirds with women from rural areas. The data show that there is only a slight preponderance of births over the number of abortions in this group, and that abortions were about as frequent in the rural areas as in Prague. About 67 per cent of the married women admitted having had an abortion at some time. Women of middle age confessed on the average 3.8 abortions in Prague, 3.5 in rural territories. There was an average of 3.5 abortions for women of 30 years of age. Women older than 30 admit on the average 4.7 abortions. Five per cent of the women have never given birth to a living child, although they had had several abortions. The report does not attempt to separate the abortions into those due to natural causes and those which were artificial. The study disclosed cases in which three abortions occurred in one woman in one year and the total number of abortions was forty. In many cases, artificial abortions are being carried out by the women themselves.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 15, 1933.

Rapid Cholecystography

Dr. Eduardo Cotrim presented before the Paulist Association of Medicine, January 20, a study of cholecystography by means of tetiothalein sodium. He concludes that the best results are obtained by an intravenous injection of 125 cc. of a 40 per cent solution of dextrose ten minutes after the tetiothalein has been given in the usual dose, dissolved in 40 cc. of distilled water and followed by 25 units of insulin subcutaneously. The gallbladder becomes visible from one and one-half to two hours later. He discusses the mechanism of the procedure, demonstrating the part that dextrose plays. He concludes with a study of the advantages of the Antonuci method over that of Graham.

Roentgenographic Study of the Mastoid

Dr. Mangabeira Albernaz, in a communication to the Paulist Association of Medicine, January 17, stated that a roentgenographic study of the mastoid may be made from a strictly roentgenologic point of view or it may take on a special clinical character. From the latter point of view, bilateral exposures are preferred and one of the most useful and simple methods is the posterior occipital of Worms-Bretton-Altschul. The author showed thirty films. The similarity of structure between the right and left mastoid of the same person is the basis of the bilateral method for comparison. Some authors deny this similarity as well as the value of bilateral exposures. The author made a roentgenographic study of 100 pairs of temporal bones and concluded that only in 1 per cent of the cases was

there a distinct difference between the two mastoids (*Annaes paulistas de medicina e cirurgia*, March, 1933).

Bacillus Proteus XL and Exanthematous Typhus

Dr. J. Carvalho Lima read before the Society of Medicine and Surgery of São Paulo, February 1, his correspondence with Professor Felix of the Lister Institute of London on the new species of *Bacillus proteus* X, which he isolated in São Paulo and which, as proposed by Professor Felix, is designated species XL (strain Lima). Studies made at the Bacteriologic Institute of São Paulo and at the Lister Institute of London demonstrate that the serum of patients suffering from the exanthematous typhus of São Paulo possesses agglutinins primarily for proteus XL and secondarily for proteus XK. Professor Felix believes that strain XL is the type that corresponds antigenically to the species of exanthematous typhus of São Paulo.

Blood Sedimentation in Pulmonary Tuberculosis

In an article in the March issue of the *Revista brasileira de tuberculose*, Dr. Lincoln Ferreira Faria draws the following conclusions based on about 1,000 experiments:

1. Various causes may affect the sedimentation rate.
2. Collecting blood for the sedimentation test must be done always at the same hour, preferably in the morning, before or after a light breakfast, which must always be equal in kind and quantity.
3. In making a sedimentation test on women, menstruation must be considered; the blood must be taken six or seven days before or four or five days after the menstrual period.
4. The exudative and pleural forms of tuberculosis with effusion cause an increased rate of sedimentation; the fibrous and some stationary ulcerating forms produce little or no change in the sedimentation rate.

NETHERLANDS

(From Our Regular Correspondent)

May 13, 1933.

The Congress on Midwifery

A number of scientific congresses were held at Ghent from March 31 to April 4. The congress on midwifery was presided over by Professor Daels and was attended by delegates from the Netherlands, France, Germany, England, Denmark, Czechoslovakia, Switzerland, Poland, Bulgaria, Lithuania, Austria and Hungary. In addition, numerous lectures in various branches of medicine were given. Professor Heymans of Ghent reported the results of his research on the vasomotor regulation of the circulation. Dr. Tytgat of Ghent discussed acute cholecystitis and compared this disorder with acute appendicitis. Dr. Wenckebach presented a communication on the mechanism of sudden death due to beriberi. During a recent journey in the Orient, he had an opportunity to observe several cases of beriberi in which sudden death was sometimes brought about by cardiac dilatation. These congresses, which are held every two years, furnish evidence of the scientific activity of the Flemish people.

The Dutch Association of Colonial Medicine

Two interesting topics were discussed at the meeting of the Netherlands association of colonial medicine: the El Tor vibrio and the possible identity of frambesia and syphilis. It was held that there is a difference between the vibrio of cholera and the El Tor vibrio. The latter is hemolytic, whereas in all vibrios isolated from cholera patients the hemolytic capacity has been absent. Dr. Kayser, who discussed the identity of frambesia and syphilis, found that a crossed immunity toward the two disorders may exist. From a study of the research of Koile, Chesney, Kemp, Nichols and Reasoner, he concludes that the differences found between the two diseases are more of a quantitative than a qualitative nature and are not sufficient to establish a distinction between them.

Marriages

CHESTER HERBERT BOWERS, Los Angeles, to Mrs. Isabel Hayner Thompson of Beverly Hills, Calif., June 14.

WARREN E. ANDERSON to Miss Sophie Lee, both of Pensacola, Fla., at Nashville, Tenn., June 10.

CHARLES WESLEY EISELE, Naperville, Ill., to Miss Blanche Mae Kennell of Rochester, Ind., June 15.

DANIEL LESLIE ROTHCHILD to Miss Dorothy Goodman, both of Newark, N. J., May 25.

SYLVESTER E. LENTZ, Leighton, Pa., to Miss Esther Lorene Guyer of Philadelphia, June 14.

RUDOLPH M. ZODIKOFF, Cincinnati, to Miss Dolores Utrecht of Charleston, W. Va., June 7.

LEONEL L. KAHN, Rayne, La., to Miss Emeline Weill of Abbeville, June 11.

MAY ROBERT MORROW, Seattle, to Miss Janice Heuston, May 18.

WALLACE D. HUNT, Seattle, to Miss Irene Shenkle, June 1.

Deaths

Richard Travis Atkins ☉ New York; University and Bellevue Hospital Medical College, 1906; professor of otolaryngology at his alma mater; formerly assistant professor of otolaryngology, Columbia University College of Physicians and Surgeons; member of the American Otological Society; fellow of the American College of Surgeons; served during the World War; surgeon in charge of the ear, nose and throat department, Bellevue Hospital; surgeon to the New York Eye and Ear Infirmary; consulting otolaryngologist to the Hackensack (N. J.) Hospital and the North Country Community Hospital, Glen Cove, N. Y.; aged 49; died, June 27, in the Massachusetts General Hospital, Boston.

Eugene G. Northington ☉ Lieut. Colonel, U. S. Army, retired, Birmingham, Ala.; Tulane University of Louisiana Medical Department, New Orleans, 1903; entered the medical corps of the U. S. Army as a first lieutenant in 1911 and rose through the various grades to that of lieutenant colonel in 1930 when he retired for disability in line of duty; fellow of the American College of Surgeons; aged 53; died, June 9, in the Letterman General Hospital, San Francisco, as a result of roentgen-ray burns received twenty-four years ago.

Max Goltman ☉ Memphis, Tenn.; University of Bishop College Faculty of Medicine, Montreal, 1892; professor of surgery, University of Tennessee College of Medicine; president of the Memphis and Shelby Counties Medical Society; fellow of the American College of Surgeons; president of the department of health, 1910-1914; surgeon to the Baptist Memorial, Memphis General and Woman's hospitals; aged 66; died, June 17, of heart disease.

Ewing Fox Howard ☉ Vicksburg, Miss.; Tulane University of Louisiana Medical Department, New Orleans, 1897; member of the House of Delegates of the American Medical Association in 1916; past president of the Mississippi State Medical Association; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Vicksburg Hospital; aged 59; died, June 8.

Henry Perry Jackson ☉ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1897; formerly demonstrator in histology, pathology and bacteriology at his alma mater; past president of the South Carolina Medical Association, and the Charleston County Medical Society; aged 70; on the staff of the Roper Hospital, where he died, June 4.

George Edwin Steel ☉ New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1886; member of the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; aged 69; died, June 12, in a hospital at Waterbury, Conn., of cerebral hemorrhage.

Walter David Moceabee, Cardington, Ohio; Ohio Medical University, Columbus, 1897; veteran of the Spanish-American and World wars; for many years a member and at one time president of the board of education; aged 58; died, June 5, in the Mount Carmel Hospital, Columbus, following an operation for appendicitis.

Frank Emil Nagel ☉ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; acting assistant surgeon, U. S. Public Health

Service; aged 57; died, June 20, in the U. S. Marine Hospital, of acute appendicitis and diabetes mellitus.

John Dooley Mauldin, Gainesville, Ga.; University of Georgia Medical Department, Augusta, 1901; member of the Arizona State Medical Association; served during the World War; aged 57; died, June 6, in Atlanta, Ga., of cardiorenal vascular disease and arteriosclerosis.

George J. Hermann, Newport, Ky.; Medical College of Ohio, Cincinnati, 1894; member of the Kentucky State Medical Association; member of the board of trustees of the Speers Memorial Hospital, Dayton; aged 59; died, June 8, of coronary thrombosis and chronic nephritis.

Russell Dunson Elliott, Provincetown, Mass.; Harvard University Medical School, Boston, 1873; member of the Massachusetts Medical Society; formerly member of the school committee of Boston and police surgeon; aged 84; died, May 21, of valvular heart disease.

William Sylvester Royce, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, Chicago, 1897; on the staff of the West-side Hospital; aged 70; died, June 8, of cerebral hemorrhage and diabetes mellitus.

Albin Monroe Painter, Kansas City, Mo.; St. Louis University School of Medicine, 1905; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 52; on the staff of the Research Hospital, where he died, May 19, of heart disease.

William Rounds, Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1903; member of the State Medical Association of Texas; aged 64; died, May 22, of intestinal hemorrhage and paralysis agitans.

Hugh M. Milstead, Hornsby, Tenn.; Memphis Hospital Medical College, 1899; member of the Tennessee State Medical Association; formerly mayor of Hornsby; bank president; aged 68; died, June 2, in Jackson, of gastric ulcer.

Frank Grosvenor Parkhill, Houston, Texas; National Medical University, Chicago, 1903; Hahnemann Medical College and Hospital, Chicago, 1906; served during the World War; aged 64; died, June 4, of general cachexia.

Joseph Howard Campbell, Bismarck, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; served during the World War; aged 60; died, May 30, of coronary sclerosis.

Clifford M. Sherron, Salem, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1879; member of the Medical Society of New Jersey; bank president; aged 77; died, June 11, of carcinoma of the prostate.

William S. Rambo, Rochester, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1889; aged 69; on the staff of the Genesee Hospital, where he died, June 9, of coronary thrombosis and chronic nephritis.

Arthur F. Rykert, Dundas, Ont., Canada; University of Toronto Faculty of Medicine, 1893; county coroner; formerly member of the legislature of Ontario; aged 63; died, May 30, in a hospital at Toronto, of heart disease.

John Bloss Wolfe, Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1915; served during the World War; on the staffs of the Wilkes-Barre General Hospital; aged 41; died suddenly, June 1, of heart disease.

William H. Ratcliff, New Albany, Ind.; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1906; member of the Indiana State Medical Association; aged 72; died, June 12, of heart disease.

Adolph Joseph Lieber, Des Moines, Iowa; University of Louisville (Ky.) School of Medicine, 1889; formerly city health commissioner; aged 68; died, May 25, of carcinoma of the intestine and liver.

Frederick Austin Mandeville, Rochester, N. Y.; University of Buffalo School of Medicine, 1875; member of the Medical Society of the State of New York; aged 79; died, May 26, of heart disease.

Samuel J. Rose, Lexington, Ky.; Jefferson Medical College of Philadelphia, 1912; served during the World War; aged 46; died, June 12, in the Good Samaritan Hospital, of an overdose of a sedative.

Gennaro Merolla, Brooklyn; Regia Università di Napoli; Facoltà di Medicina e Chirurgia, 1883; member of the Medical Society of the State of New York; aged 80; died, June 1, of heart disease.

William Haverfield Taylor, Youngstown, Ohio; Rush Medical College, Chicago, 1902; aged 56; died, June 1, in the

Northside unit of the Youngstown Hospital, of carcinoma of the liver.

Marshall H. Stephens, Bremen, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; formerly mayor of Bremen; aged 70; died, May 6, of intestinal obstruction.

Reuben D. Whisler, Findlay, Ohio; Baltimore Medical College, 1892; formerly county coroner; on the staff of the Home and Hospital; aged 66; died, June 14, of heart block.

Nathan D. Woodard, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1879; member of the Indiana State Medical Association; aged 83; died, June 8, of pneumonia.

Adrian Hava, New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1884; aged 69; died, May 29, of bronchopneumonia and dilatation of the heart.

Mary M. Van Nuys, Lebanon, Ind.; Northwestern University Woman's Medical School, Chicago, 1897; aged 71; died, May 26, of cerebral hemorrhage and chronic myocarditis.

James Edward Maxwell, Decatur, Mich.; University of Michigan Medical School, Ann Arbor, 1892; aged 68; died, June 11, of injuries received in an automobile accident.

Ralph L. Waters, Lakeside, Ohio; Western Reserve University Medical Department, Cleveland, 1883; aged 73; died, May 5, at Bloomington, Ill., of organic heart disease.

Alfred Waldemar Herzog, New York; University of the City of New York Medical Department, 1887; aged 67; died, May 30, of hypertension and cerebral hemorrhage.

Dellah M. Wells, Providence, R. I.; Dartmouth Medical School, Hanover, N. H., 1883; aged 72; died, May 25, of diabetes mellitus, arteriosclerosis and nephritis.

Joseph R. Appelbe, Saginaw, Mich.; Saginaw (Mich.) Valley Medical College, 1902; aged 67; died, June 5, of cardiac insufficiency following gallbladder colic.

Ralph Franklin Hodgdon, Somerville, Mass.; Tufts College Medical School, Boston, 1902; aged 53; was found dead, May 7, of a self inflicted bullet wound.

William Oscar Warren, Carlyle, Ill.; St. Louis University School of Medicine, 1915; served during the World War; aged 42; was found dead, May 30.

Henry Adams, Embro, Ont., Canada; Eclectic Medical College of Pennsylvania, Philadelphia, 1864; Civil War veteran; aged 98; died in May, at Toronto.

Ernest George Aston, Port Washington, Wis.; Marquette University School of Medicine, Milwaukee, 1924; aged 36; died, June 2, of heart disease.

Charles R. Wells, Wauconda, Ill.; University of Michigan Medical School, Ann Arbor, 1866; aged 88; died, May 6, at Crystal Lake, of myocarditis.

George King Pratt, Jr., New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1906; aged 49; died, June 9, of heart disease.

Omar Matthew Wilson, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1904; aged 52; died suddenly, May 19.

Robert Perry Cummins, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 58; died, May 30, of heart disease.

Orley H. Murphy, Lincoln, Ill.; Chicago College of Medicine and Surgery, 1917; aged 65; was killed, May 19, in an automobile accident.

William S. Sproles, Bluff City, Tenn.; Chattanooga (Tenn.) Medical College, 1898; aged 63; died, June 6, of carcinoma of the prostate.

Walter M. Friend, Brooklyn; Harvard University Medical School, Boston, 1884; aged 63; died, May 31, of cerebral hemorrhage.

Garrett Fitzgibbon, Chicago; Rush Medical College, Chicago, 1889; aged 76; died, June 3, of carcinoma of the gallbladder.

Silas Wright Hurd, Lockport, N. Y.; Hahnemann Medical College of Philadelphia, 1880; aged 76; died, June 7, of heart disease.

George W. Pickering, Urbana, Ohio; Starling Medical College, Columbus, 1886; aged 73; died, June 7, of heart disease.

R. W. Harris, Algiers, Ind.; Kentucky School of Medicine, Louisville, 1877; aged 84; died, June 8, of cerebral hemorrhage.

John W. Speight, Roper, N. C.; Kentucky School of Medicine, Louisville, 1885; aged 67; died, June 23, of heart disease.

George W. Stanton, Athens, Tenn. (licensed, Tennessee, 1902); aged 71; died, June 12, of cardiac decompensation.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[Editorial Note: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

Femalga Capsules.—D'Ormont Laboratories, Philadelphia. Composition: Amidopyrine, 2.6 grains to each capsule. For painful menstruation, etc. Fraudulent therapeutic claims.—[N. J. 18368; February, 1932.]

Means' Pills.—W. B. Means, Lebanon, Pa. Composition: Acetanilid, caffeine, camphor and strychnine. For rheumatism, female disorders, etc. Fraudulent; acetanilid content wrongly declared.—[N. J. 18369; February, 1932.]

Meth-O-Sal.—Kelvan Co., Philadelphia. Composition: Methyl salicylate, oil of camphor, petrolatum and paraffin. For rheumatism, pneumonia, neuritis, etc. Fraudulent therapeutic claims.—[N. J. 18376; February, 1932.]

Seven Oraps.—Sbafer Pharmacal Co., Philadelphia. Composition: Sodium salicylate and water, colored and flavored. For rheumatism, kidney and bladder troubles, etc. Fraudulent therapeutic claims.—[N. J. 18377; February, 1932.]

Kline's Rheumatic Remedy.—H. E. Kline, Philadelphia. Composition: Sulphur (63 per cent), glycerin, flavored with methyl salicylate. Fraudulent therapeutic claims.—[N. J. 18378; February, 1932.]

Laxative 9 to 9 Health.—9 to 9 Pharmacal Co., Philadelphia. Composition: Quinine sulphate, epsom salt, iron (ferrie) chloride and water. For liver and kidney disorders, etc. Fraudulent therapeutic claims.—[N. J. 18379; February, 1932.]

Phyllosan.—Lightfoot and Schulz Co., New York City. Composition: Chlorophyll and compounds of calcium, aluminum and iron. For anemia, high blood pressure, etc. Fraudulent therapeutic claims.—[N. J. 18381; February, 1932.]

Nestar Emulsion of Cod-Liver Oil.—Nestor Drug and Chemical Co., Chicago. Composition: Cod-liver oil (about 40 per cent), small quantities of calcium and sodium hypophosphites, egg yolk, phosphoric acid, alcohol (8.4 per cent) and water. Flavored with methyl salicylate. For pulmonary disorders, etc. Fraudulent therapeutic claims.—[N. J. 18384; February, 1932.]

Hays' Specific.—Kolb Bros. Drug Co., Paducah, Ky. Composition: Small quantities of ammonium and iron sulphates and sulphuric acid, with a laxative plant drug, alcohol and water. Cure-all. Fraudulent therapeutic claims.—[N. J. 18387; February, 1932.]

Williams' (G. B.) Liver and Kidney Pills.—Interstate Drug Co., Quitman, Ga. Composition: A compound of mercury such as calomel, aloe, and a resin such as podophyllum resin, a trace of an alkaloid. Fraudulent therapeutic claims.—[N. J. 18388; February, 1932.]

Moore's Herb Bitters.—Moore Drug Co., Hot Springs, Ark. Composition: Sodium salicylate, a laxative plant drug and water. Cure-all. Fraudulent therapeutic claims.—[N. J. 18390; February, 1932.]

Hinkaps.—Hinkle Capsule Co., Inc., Mayfield, Ky. Composition: Capsules containing iron (ferrie) chloride, calcium carbonate, cubeb oil, extracts of plant drugs and talc. For kidney disorders. Fraudulent therapeutic claims.—[N. J. 18393; February, 1932.]

Kobala Tonic.—M. J. Weiskopf, Chicago. Composition: Iron citrate, methenamine, laxative plant drug, alcohol and water. Cure-all. Fraudulent therapeutic claims.—[N. J. 18395; February, 1932.]

Tiko.—Kells Co., Newburgh, N. Y. Composition: Potassium iodide, alcohol, water and a trace of colchicine. For rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18396; February, 1932.]

Waad's Fever Pills.—Wm. Wood and Sons, Cairo, Ill. Composition: Acetanilid (0.86 grain per pill), cinchonine and a laxative plant drug. Fraudulent therapeutic claims.—[N. J. 18400; February, 1932.]

Vaca.—Voght Laboratories, Escanaba, Mich. Composition: Extracts of plant drugs, sugar, glycerin, alcohol, water and a small quantity of ammonium chloride. For influenza, asthma, hay fever, etc. Fraudulent therapeutic claims.—[N. J. 18453; March, 1932.]

Murmann's Compound.—D. W. Price Co., Toledo, Ohio. Composition: Wood creosote, sugar, water and a small quantity of an iron compound. Bronchitis, asthma, etc. Fraudulent therapeutic claims.—[N. J. 18460; March, 1932.]

PX.—PX Products, Inc., Detroit. Composition: Salt, aluminum chloride, zinc sulphate and water. For eczema, etc. Not germicidal. Fraudulent therapeutic claims.—[N. J. 18470; March, 1932.]

Triner's Cold Tablets.—William A. Webster Co., Memphis, Tenn. Composition: Acetanilid (0.96 grains per tablet), quinine (0.34 grains per tablet), and podophyllum resin. Fraudulent therapeutic claims.—[N. J. 18472; March, 1932.]

Cerevisine Tablets.—E. Fougere and Co., Inc., New York. Composition: Essentially dried yeast. For diabetes. Fraudulent therapeutic claims.—[N. J. 18475; March, 1932.]

Arex.—Arex Products Corporation, Brooklyn, N. Y. Composition: Aspirin, caffeine, charcoal, a bismuth compound, corn starch and talc. For headache, rheumatism, neuralgia, etc. Fraudulent therapeutic claims.—[N. J. 18479; March, 1932.]

Wagner's Tonic and Stamaehie.—A. L. Wagner and Co., North Chicago, Ill. Composition: Extracts of bitter plant drugs, glycerin, alcohol (about 20 per cent by volume) and water. Alcohol content falsely declared. Fraudulent therapeutic claims.—[N. J. 18481; March, 1932.]

Sassafala.—Sassafala Manufacturing Co., Elmira, N. Y. Composition: A petrolatum ointment with menthol, eucalyptol and methyl salicylate. For catarrh, pneumonia, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18483; March, 1932.]

Korathein.—Georgian Pharmacal Co., Atlanta, Ga. Composition: Acetphenetidin (1.12 grains to the capsule), phenolphthalein, caffeine, camphor, a calcium compound and a salicylate. For influenza, neuralgia, etc. Fraudulent therapeutic claims.—[N. J. 18484; March, 1932.]

Rice's G. G. Liniment.—Rice Chemical Co., Greensboro, N. C. Composition: Turpentine oil, ammonia, an emulsifying agent, and water. Fraudulent therapeutic claims.—[N. J. 18486; March, 1932.]

Hill's Rheumatic and Gout Remedy.—Hill Products Co., Orange, N. J. Composition: Potassium acetate, suspended vegetable matter and 91 per cent water. Fraudulent therapeutic claims.—[N. J. 18487; March, 1932.]

Clay's Rheumatic Medicine.—E. J. Kieffer, Savannah, Ga. Composition: Colchicine, potassium iodide, a nitrite and extracts of plant drugs. Fraudulent therapeutic claims.—[N. J. 18492; March, 1932.]

Devore Laxative Cold and Grippe Tablets.—Devore Manufacturing Co., Columbus, Ohio. Composition: Acetanilid (2 grains to the tablet), cinchona alkaloids, camphor, aloe and extracts of plant drugs. Fraudulent therapeutic claims.—[N. J. 18494; March, 1932.]

A. P. C. Laxative Quinine Cold Tablets.—American Pharmaceutical Co., New York City. Composition: In each tablet, acetanilid (about 1½ grains), quinine sulphate, caffeine, monobromated camphor and an extract of a laxative plant drug. Fraudulent therapeutic claims.—[N. J. 18498; March, 1932.]

Phosphorein.—Eimer and Amend, New York. Composition: Calcium and sodium glycerophosphates, phosphoric acid, nux vomica and glycerin. Nerve tonic. Fraudulent therapeutic claims.—[N. J. 18499; March, 1932.]

Hien Fong Essence.—Knorr Medical Co., Detroit, Mich. Composition: Oils of spearmint, peppermint and camphor, a small quantity of ether with extracts of plant drugs, alcohol (52.5 per cent by volume) and water. Cure-all. Alcohol content wrongly declared. Fraudulent therapeutic claims.—[N. J. 18502; March, 1932.]

Cystogen Aperient.—Cystogen Chemical Co., Brooklyn. Composition: Sodium phosphate (51.4 per cent) and methenamine (7.8 per cent), baking soda, citric acid and tartaric acid. "Internal antiseptic." Fraudulent therapeutic claims.—[N. J. 18504; March, 1932.]

Cystagen Lithia.—Cystogen Chemical Co., Brooklyn. Composition: In each tablet, methenamine (3 grains), lithium tartrate (2.9 grains), baking soda, citric acid and tartaric acid. For gout, rheumatism, diabetes, etc. Fraudulent therapeutic claims.—[N. J. 18504; March, 1932.]

Oxien Nazane Salve.—Giant Oxie Co., Augusta, Me. Composition: A petrolatum ointment with sassafras oil, camphor and methyl salicylate and traces of carbolic acid and menthol. Cure-all. Fraudulent therapeutic claims.—[N. J. 18505; March, 1932.]

Vernas.—Vernas Chemical Co., Paterson, N. J. Composition: Zinc chloride, glycerin, alcohol (23.2 per cent by volume) and water, flavored with cinnamon and peppermint oils. Not antiseptic. "Feminine hygiene douche." Fraudulent therapeutic claims.—[N. J. 18508; March, 1932.]

Po-Me-Ka.—Rex Chemical Co., Inc., Waynesboro, Pa. Composition: Oil with a stearic acid base containing boric acid, a potassium compound, carbolic acid, glycerin and oils of menthol, camphor and pine. For influenza, pneumonia, etc. Fraudulent therapeutic claims.—[N. J. 18509; March, 1932.]

Edwards' Compound Oandelion Tablets.—Relief Laboratory, Inc., Newburgh, N. Y. Composition: Extracts of plant drugs including cathartics such as aloe and jalap resin. For rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18512; March, 1932.]

Red Pills.—Joseph Triner Co., Chicago. Composition: Aloe, strychnine and ginger oleoresin. For indigestion, female troubles, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18514; March, 1932.]

Palmiaed.—Simmon Co., Cleveland. Composition: Capsules containing a fatty substance, creosote and water. Falsely claimed to be germicidal and antiseptic. For tuberculosis, etc. Fraudulent therapeutic claims.—[N. J. 18517; March, 1932.]

Pierre's Hygeiafarms.—Pierre Chemical Co., Chicago. Composition: Boric acid, zinc sulphate and a quinoline derivative. Falsely claimed to be germicidal and antiseptic. For leucorrhea, etc. Fraudulent therapeutic claims.—[N. J. 18521; March, 1932.]

Duncan's Owl Tonic.—Duncan Chemical Co., St. Louis. Composition: Epsom salt, quinine sulphate, citric acid, a small quantity of iron chloride, and water. For influenza, malaria, etc. Fraudulent therapeutic claims.—[N. J. 18522; March, 1932.]

Lana Fume Pneumonia Salve.—McKesson-Stewart-Holmes Drug Co., Seattle. Composition: Volatile oils including eucalyptus oil, camphor and ammonia in a base of wool fat. Fraudulent therapeutic claims.—[N. J. 18524; March, 1932.]

Hooper's Tettremidy.—Eucaline Medicine Co., Dallas, Tex. Composition: Acetic acid (17 per cent), glycerin (29 per cent) with traces of arsenic and iron compounds, and water. For eczema, etc. Fraudulent therapeutic claims.—[N. J. 18527; March, 1932.]

Fem Tonic.—McKesson-Merrell-St. Louis Drug Co., St. Louis. Composition: Nux vomica, a laxative drug, a small quantity of salicylic acid, and sugar, alcohol and water. A tonic for "female organs." Fraudulent therapeutic claims.—[N. J. 18528; March, 1932.]

Correspondence

TERPEZONE

To the Editor:—Terpezone, Inc., is distributing a circular advertising "Terpezone," in which it quotes various favorable statements ascribed to different individuals. Among these is one made by me nearly twenty years ago (1914).

It is true that, in 1913, a limited personal experience with Terpezone, reinforced by the enthusiasm of an assistant in whom I placed much confidence, led me to ascribe favorable results in cases that more mature judgment might explain on the basis of autosuggestion. I stopped the use of Terpezone inhalation after a sufficient trial had convinced me of its lack of value. For many years I have not considered it of any importance as a therapeutic agent.

S. ADOLPHUS KNOPE, M.D., New York.

[NOTE.—After examination of the evidence on Terpezone as a remedy in pulmonary tuberculosis, the Council on Pharmacy and Chemistry of the American Medical Association authorized the publication of a lengthy report in THE JOURNAL, April 14, 1928. The report concludes as follows:

"The information presented in favor of Terpezone certainly does not establish its identity, purity or its therapeutic value. The Council is therefore obliged to declare Terpezone unacceptable for New and Nonofficial Remedies because no satisfactory evidence is presented to show that Terpezone is pinene ozonide or that in the manufacture of the product the formation of injurious by-products is controlled or prevented; because the claimed harmlessness of the product is not established, and because it is marketed with unwarranted and exaggerated claims of therapeutic value."—ED.]

MALARIA TRANSMITTED BY HYPODERMIC SYRINGE

To the Editor:—In regard to the article in THE JOURNAL, May 6, by Dr. O. C. Nickum on "Malaria Transmitted by Hypodermic Syringe," I should like to add this:

There have been about twelve cases in the past year at this institution of malaria, proved by finding the organisms in the blood, in morphine addicts who took the drug intravenously. The first case I saw in April, 1932, and this addict stated that the condition was due to the fact that he had used another addict's syringe in taking a dose intravenously. He also stated that, as long as the user did not take the drug intravenously, he did not develop malaria. Recently there were six such cases in the Men's Building here, and four of them were in Dr. Samuel N. Feinberg's service. All of these patients belong to the same group of addicts, although they would not admit the fact, and passed the syringe round to each one, each taking an intravenous dose. This apparently is a common practice among morphine addicts.

It has reached a point at which many of the interns here, who see a patient that has thrombotic basilar veins and gives a history of intermittent chills and fever occurring at regular intervals, usually make a diagnosis of malaria in a morphine addict in the examining room.

NATHAN FLAXMAN, M.D., Chicago.

Senior Intern, Cook County Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ALLERGY TO FOODS AND MIGRAINE

To the Editor:—I have under my care a man who for years has suffered from severe headaches, which I think are caused by food allergy. I have not the means for testing him for sensitivity to various substances, but for the past three weeks I have had him on elimination diets 1, 2 and 3, as described by Rowe in his book "Food Allergy," with almost complete relief from symptoms. Whereas formerly never a day went by without a headache, now the headaches occur at weekly intervals. Is it probable that there is some food to which he is mildly sensitive that he is still taking in his diet? What is your opinion as to the use of 5 per cent Armour's peptone solution in such cases? Please describe the technic for preparing this solution. Is epinephrine of any value for the relief of headaches due to allergic migraine? Please omit name and address.

M.D., Texas.

ANSWER.—The relief obtained from elimination diets 1, 2 and 3 favors food allergy as a cause of the headaches. With a continued use of these diets the remaining headaches may disappear, since at times from two to four weeks is necessary before the reacting allergens are entirely eliminated from the sensitized tissue cells. The headaches may be recurrent because the patient is not 100 per cent strict in adhering to his diet. It is also possible that some foods in the elimination diets he is taking are productive of mild allergies. Such mild allergies may be suspected at times through the patient's history of food dislikes or disagreements. A food diary as suggested by Vaughan may help. One or two of the separate elimination diets might be tried, or supplemental trial diets outlined by Rowe can be used. Of these his cereal-free elimination diet is of special value.

Rowe (Food Allergy, Philadelphia, Lea & Febiger, 1931) has emphasized that diets based on skin reactions, and personal histories of food dislikes or disagreements, may relieve food allergy. This has been substantiated by Vaughan, Eyer mann, Balyeat and others. However, positive skin reactions and personal histories of possible food allergies do not always denote clinical food sensitizations. Moreover, food allergy frequently exists without satisfactory scratch or intradermal skin reactions. The elimination diets according to Rowe should be modified by the substitution of similar foods for any in the diets to which definite skin reactions are obtained or for which a history of dislikes or disagreements exists. And when patients cannot be skin tested because of expense or distance from physicians qualified to do such testing, the use of "elimination diets" is justifiable.

It must be emphasized that several modifications of the "elimination diets" have been suggested and that diet trial may be carried out by other methods. However, the elimination diets of Rowe are standardized and are in wide use today and if used according to directions assure proper caloric, vitamin and mineral intake, so that nutritional damage will not occur.

Armour's 5 per cent peptone can be purchased in sterile ampules. When given intravenously it is of value in a few cases; but severe shock reactions contraindicate its use, and its effects are not lasting. Elimination of allergic foods is much more effective. Epinephrine may relieve some patients with allergic migraine, but it is not so effective as in bronchial asthma or urticaria.

TINEA CAPITIS

To the Editor:—Is there any new preparation for the local treatment of tinea capitis? Occasionally people object to either thallium or x-rays. I am well acquainted with the treatments as given by Hubbard, Hartzell, McLeod, Sequeira and Andrews. Is the medicated gutta percha a success? It is reported on both ways. Also the ethyl chloride. I have not tried either one, and both have been reported on favorably. Please omit name.

M.D., Canada.

ANSWER.—An uncertain percentage of cases of ringworm of the scalp will yield to milder measures than roentgen rays or thallium acetate. This percentage varies with the virulence of the organism and the resistance of the patient. It is always justifiable to try the milder measures before resorting to the more regularly effective but more dangerous ones.

The gutta percha method of Kingery, from the warning given to cease treatment on irritation, is fairly strong treatment. The ethyl chloride treatment has been found more troublesome to apply and less efficient than the old fashioned ointment method.

E. P. Lieberthal (Treatment of Microsporon Infection of the Scalp, *Arch. Dermat. & Syph.* 18:97 [July] 1928) has combined the use of a 5 per cent aqueous solution of mercuriochrome, painted on every other day, with the use of 10 per cent ointment of ammoniated mercury, with success in a fair percentage of cases. Another well tried method not often mentioned is the production of dermatitis venenata in the infected areas by the successive application of tincture of iodine and ointment of ammoniated mercury. This should be tried on a small area first to judge its intensity and should not be repeated on the whole area infected until the reaction from the first application has fully subsided. The superficial infections with microsporon and other forms of fungus are persistent because they do not arouse a reaction in the tissues. This combined method, with the Kingery method and many others, provides such an inflammatory reaction, which aids in the cure.

The urine should be regularly examined for albumin and casts when mercurials are used. Daily shampooing is an important part of any of these treatments. Careful inspection of the scalp, with microscopic examination of the hair in caustic potash solution, and cultures from the hair should be kept up for many months after clinical cure.

If roentgen or thallium acetate treatment is necessary, an interval of rest should be given that all inflammatory reaction may subside before the more severe treatment is begun.

ARTHRITIS WITH BURNING SENSATION IN LIMBS

To the Editor:—A man, aged 70, has been troubled for two and a half years with arthritis involving the elbows, wrist, hands, knees and ankles. He is undernourished and has a moderate secondary anemia and considerable generalized atherosclerosis. The joints show hypertrophic changes, with some limitation of motion in the upper extremities. Under foreign protein, iodide and salicylate medications, the joints have shown some improvement, but for the past month the patient has suffered considerably with a marked burning sensation in the lower extremities, from the knee down, coming on generally at night. The burning is not noticeable when the patient is sitting up or walking about. Amidopyrine, acetylsalicylic acid, and codeine and anytal compound have been tried, also various local applications without effect in relieving the burning sensation, which now is interfering with the patient's sleep. Could you suggest any medication or method of treatment that will relieve the patient from this distressing symptom? The pulsation in the dorsalis pedis is present. The extremities do not show any objective temperature changes and there is no cyanosis when in dependent position. Please omit name.

M.D., Tennessee.

ANSWER:—The symptoms may not be due to true arthritis but to a related or superimposed condition. One thinks of circulatory disturbances of the lower extremities, such as those due to arteriosclerosis, thrombo-angiitis obliterans, acroparesthesia and various vasomotor circulatory neuroses.

Measures that may be of value should include:

1. Physical therapy to the upper extremities; cold applications and contrast applications; that is, warm and cold applied alternately to the lower extremities.
2. Improving the condition of the blood.
3. Posture exercises; that is, so-called Buerger exercises.
4. Operation on the sympathetic nervous system, which should be considered after the Brown test indicates the anticipated value of this procedure.
5. Vaccine, which may be tried without any promise.

PELVIC PAIN DURING COITUS

To the Editor:—I have a woman patient, aged 32, who is normal in all ways except for a slight constipation. She has been married for about eleven years and has one child 10 years of age. This labor was preceded by a severe period of vomiting. She has had two severe attacks of gall-bladder disease but has had no operations except tonsillectomy and hemorrhoidectomy and no other sicknesses. Her physical examination is entirely negative. She enjoys coitus and experiences a strong orgasm. There is no discomfort at all during the process of coitus or the accompanying orgasm. For the last three or four months the orgasm has been particularly marked in severity and for the last two months she has experienced a pain which is sharp and spasmodic in type, occurring about ten minutes after the orgasm and lasting for about ten minutes. It is accompanied by a slight nausea and is relieved by light massage, at which time there seems to be some slight shifting of gas in the bowel. There is no pain unless there is an orgasm. Prior to two months ago there was no pain at all. The pain is located deep in the pelvis on one side or the other or both. Can you suggest the cause of the pain and any treatment of the symptoms? Please omit name.

M.D., Oregon.

ANSWER:—Cases of this condition, which is allied to dyspareunia, have been described in the literature, although the condition is far from common. They are generally psychic in character, and psychic treatment is in order. A case in point is one in which a young girl had been raped and the act was accompanied by severe abdominal pain. Years later, when she

married, each act of coitus was accompanied or followed by such abdominal pain. In other cases the act of coitus, while perfectly normal and pleasurable, is followed by headache, nausea, vomiting, diarrhea and vertigo.

The most important point in treating these cases is to find some local pathologic condition which might be the cause of these disagreeable sensations. Although the history given states that the physical examination is normal, it must be remembered that at times apparently minute and unimportant lesions may exist which may be the source of these symptoms, such as a minute anal fissure or areas of hyperesthesia either in the genital organs or about the anus. Should none of these conditions be discovered, the case must be considered purely psychic and it may be necessary to have a psychoanalytic examination to determine the cause of the trouble.

ORTHOPEDIC SURGEONS ABROAD

To the Editor:—Can you give me a list of noted orthopedic surgeons in Europe who are particularly noted for doing something out of the usual routine of orthopedic work? For example, Lange in Germany, noted particularly for his silk strand tendon surgery; Schmorl, noted for his research in intervertebral disk injuries, and Böhler of Vienna. I will appreciate any information you may give me concerning this.

HERBERT E. HIPPS, M.D., Dallas, Texas.

ANSWER:—The prospective traveler will find that in almost every large orthopedic clinic in Europe either the chief of the clinic or some of his assistants speak English. There are also other English speaking visitors who will aid the person not familiar with the language in understanding significant statements made by the teacher. A list of important orthopedic surgeons abroad follows:

| | | |
|-----------------|----------------|---|
| England: | Liverpool: | McMurray, Armour, McFarland, R. Watson Jones* |
| | Manchester: | Platt |
| | Newcastle: | Martin |
| | Birmingham: | Naughton Dunn |
| | Bristol: | Ernest Hey Groves |
| | London: | H. A. T. Fairbank, Rowley, Bristow, Perkins, Elmslie, Trethowan, Bankart, Muirhead Little, Alfred Tubby |
| Scotland: | Edinburgh: | Cockrane, Wilkie |
| Ireland: | Dublin: | Irwin, Wheeler, Haughton |
| Wales: | Oswestry: | Gobown, Shropshire Orthopaedic Hospital |
| Germany: | Berlin: | Gocht, Mommisen, Max Böhm |
| | Munich: | Lange |
| | Cologne: | Hackenbroch |
| | Frankfurt: | Ludloff |
| Austria: | Graz: | Erlacher |
| | Vienna: | Hass, Spitz |
| France: | Bercy-sur-mer: | Calve, Galland, Calot, Sorrel, Delahaye |
| | Lyons: | Leriche, Policard, Nové-Josseland |
| | Paris: | Ombredanne, Lance, Delbet, Dujarrier |
| Italy: | Bologna: | Putti |
| | Milan: | Galeazzi |
| | Rome: | della Vedova |
| | Venice: | Delitala |
| | Turin: | Lavermicocca |
| Czechoslovakia: | Brno: | B. Frejka |
| Switzerland: | Clairmont: | DeBrunner |
| | Zurich: | Schulthess |
| Denmark: | Copenhagen: | Scheuermann, Guildal |
| Holland: | Leyden: | Jansen, Voorhoeve |
| Belgium: | Brussels: | R. Soeur |
| Norway: | Stavern: | H. Sundt |
| Finland: | Helsingfors: | F. W. G. Langenskiöld |
| Sweden: | Stockholm: | Patrik Haglund, Harold Nilsson, Nils Silferskiöld, J. H. Waldenström |
| | Gothenburg: | H. Camitz |
| | Helsingborg: | C. Holmdahl |
| | Lund: | G. S. Frising |
| Russia: | Leningrad: | Henry Turner |
| China: | Shanghai: | W. S. New |
| Australia: | Sidney: | N. Royle |

* Sir Robert Jones died on or about January 14.

HYPERSECRETION DURING PREGNANCY

To the Editor:—Can you give me the best treatment for a primipara, aged 25, finishing three months of pregnancy, who is of a nervous type and of slender build with alternating nausea and vomiting and abundant hypersecretion, wetting four or five bath towels a day? Hypersecretion is bad now. Physical examination gives normal results. The secretion just tires her out. I have prescribed complete rest in bed for a month, with no visitors, a dry diet, alkali powders and allonal tablets. Please omit name.

M.D., Minnesota.

ANSWER:—Generally there is a diminished functioning of the sweat glands during pregnancy. This diminution becomes intensified as gestation progresses but during the puerperium there is a sharp reversal, so that severe perspiration is fairly common during the first few days after delivery. The greatest

decrease in the elimination of fluids through the skin during pregnancy occurs in women who have nephritis and eclampsia; hence in these women the kidneys have an extra burden to carry. However, some women exhibit an increased tendency toward sweating during pregnancy and the parts most affected are usually the abdomen, breasts, back and vulva. The patient's general resistance is lowered as a result of this drain of fluid. The cause of the excessive perspiration is undoubtedly a disturbance in the nervous mechanism. Unfortunately there is no specific remedy that will diminish the activity of the sweat glands and the most one can do is to build up the patient's resistance, replace the fluid lost by the ingestion of large amounts of liquids, and administer mild sedatives such as the bromides. In addition to this it is highly important to supply the patient with abundant sodium chloride. This is in accord with the following statement, which appeared in *THE JOURNAL*, March 25, page 989:

Profuse sweating results in a loss not only of considerable volumes of water but also of surprisingly large quantities of salt. It is well known that the physiologic integrity of the neuromuscular mechanism is highly dependent on the presence of inorganic ions. . . . A rapid dilution of intravascular and interstitial fluids diminishes the osmotic pressure with the result that, until readjustment is made either by ingesting salts or by excreting the excess water, subjective symptoms occur varying from mild fatigue and lassitude to actual muscular cramps in man and convulsions and death in experimental animals. Among stokers, iron workers and miners, such cramps occur in individuals who, during severe sweating, drink large quantities of water. It has been shown that the seizures do not occur if salt solution is consumed instead of water; furthermore, appetite is maintained and a feeling of vigor and freshness after the hard day's work has been noted.

ECZEMA OF FACE DUE TO SENSITIVITY

To the Editor:—A woman, aged 54, came to my office with a case of eczema erythematousum on the right side of the face, the right eye being entirely closed from the edema, the skin roughened and slightly infiltrated. From my inquiries, this condition was brought on from eating fish three days before. Moist compresses of a solution of boric acid, resorcinol and phenol (1 per cent) relieved the condition and one week later the skin was clear, outside of the desquamation taking place. Three weeks later, the patient put on some face cream and powder, and in twenty-four hours the weeping eczema was back. The foregoing treatment was resorted to, again with good results. Six weeks after the desquamation was at an end, the patient again applied face cream and powder, and the eczema recurred in twenty-four hours, as previously. Can you suggest some kind of cream or lotion that would relieve the feeling of dryness and form a base for face powder without irritating that peculiarly sensitive skin? Kindly omit name.

M.D., New York.

ANSWER.—It is assumed from the description that the second and third attacks of dermatitis were in the same area as the first. This would signify that the skin of this area has become sensitized in some way to face powder, most likely to orris root, an ingredient of many face powders, or, what is less likely, to some ingredient of cold cream. Perhaps it is the application of a soft ointment that brings out the dermatitis. The patient should use zinc paste consisting of zinc oxide, colored with calamine powder to the proper shade, and starch, 25 per cent of each in petrolatum. This should be mixed and applied thinly. Or she may use as a powder base tragacanth lotion, tragacanth powder, 5 Gm.; boric acid, 15 Gm.; glycerin, 15 Gm.; water, to make 500 cc. The tragacanth is shaken with the glycerin and the boric acid powder; then the water is added in four parts, the mixture being shaken vigorously on each addition of water. Rose water or other perfumes may be added if one can be sure that the patient is not sensitized to them. "Allergen free" face powders are to be obtained and may be useful in this case.

EXAMINATION OF URINE OF PATIENTS IN COMA

To the Editor:—Please state whether urinalysis usually reveals casts and albumin in most cases of deep coma from disease. In a recent meeting of our county medical society, apparently, I was alone in my opinion that these abnormal constituents were usually present in most cases of deep coma. Twenty years ago, Cabot, in the second edition of his "Differential Diagnosis," mentioned their presence in the urine of most of the cases of coma due to causes listed in his table XIV. Please omit name and address.

M.D., Arkansas.

ANSWER.—Deep coma, or unconsciousness from which the patient cannot be readily aroused, may be due to a variety of disease conditions. The most important are uremia, diabetes, cerebral hemorrhage, cerebral thrombosis, cerebral embolism, brain injury, puerperal eclampsia, epilepsy, epidemic encephalitis, and meningitis.

In cases of coma, examinations of the urine, cerebrospinal fluid and blood are all important and should be done as soon as possible. Two conditions often coexist. A patient may have diabetes and develop a cerebral hemorrhage or thrombosis. A man may develop uremia while he is drunk. A head injury

may result from a fall due to coma. A complete and thorough examination of the patient is always desirable, even though an apparent cause has been found.

A urine examination should be made in every case of coma. This urine examination alone is never sufficient to establish the diagnosis, as albumin and casts may be due to various poisons, passive congestion or renal disease. Uremic or diabetic coma is unlikely if the urine is normal.

Casts are present in the urine in most kidney diseases, being numerous in the acute and chronic forms, especially with edema. They are less frequent in the primary contracted kidney or arteriosclerotic kidney usually found in essential hypertension. They also occur in the urine in chronic passive congestion, febrile albuminuria and marked jaundice. In diabetic acidosis with coma, granular casts are often found. In fact, casts may occur in any condition in which the kidneys are altered by toxic, inflammatory or circulatory disturbances.

Hyaline casts may be found in small numbers even in normal urine after sufficient search. They are not pathognomonic of any one condition. When numerous, they indicate a renal disturbance. In the marked pathologic changes of acute, sub-acute or chronic nephritis, other types of casts (granular, epithelial, waxy, blood casts, pus casts) are also found.

TOXICITY OF LACQUER THINNER

To the Editor:—Will you please tell me if there is any toxic effect from breathing the fumes of or working with the lacquer thinner made by the Jones Dalbey Company of Detroit? Any information regarding this product will be greatly appreciated.

RONALD F. GARVEY, M.D., Olean, N. Y.

ANSWER.—The lacquer diluents made by the firm mentioned are believed to be similar to those in wide use throughout the country. These diluents may contain toluene, butanol and butyl acetate, among other constituents. Benzene is a common ingredient, but the firm mentioned states that benzene is not used. Other constituents in some, but not all, diluents are amyl, methyl and ethyl alcohol, naphtha and xylene.

In the absence of benzene and methyl alcohol, toluene is the most probable source of serious damage to exposed workers. Toluene may be more toxic than benzene in the production of acute manifestations but is less liable to induce the chronic state characterized by leukopenia, hemorrhage, anemia, and general increased susceptibility to infection—the well known clinical picture of benzene poisoning. However, both toluene and xylene are capable of causing such manifestations. The clinical state is not distinguishable from benzene poisoning. Various other constituents of lacquer diluents may produce inflammation of the respiratory tract and skin. Various chronic conditions may be caused by naphtha, but as yet these lack proper descriptions beyond the assertion that manifestations resembling those of multiple sclerosis may arise. Industrial methyl alcohol poisoning, including blindness, is possible, but at this time industrial methyl alcohol poisoning is rare.

NODULES IN BREAST

To the Editor:—For a period of five years I have observed a patient who has several small nodules in each breast. These increase in number before each menstrual period and many of them disappear after the menstrual period. The nodules are about 1 cm. in diameter, appear to be in the gland tissue, and are freely movable and somewhat painful on pressure. Will you kindly let me know what the nature of these nodules may be and whether there is a possibility that they may become malignant? Please omit name.

M.D., New York.

ANSWER.—There are three possible lesions to be considered; in the order of probability they are (1) mazoplasia, (2) multiple fibro-adenomas and (3) multiple cysts. The age of the patient would help in the differential diagnosis. Mazoplasia, or what is erroneously called chronic mastitis, is the most likely probability, especially if the nodules vary in size with the menstrual period. All the available evidence indicates that this state is not a precursor of cancer. Multiple fibro-adenomas are a possibility, especially if the lesion dates back to the time of puberty. Transillumination of the breasts might help to differentiate the state from multiple clear fluid cysts. If the lesions are fibro-adenomas, they bear no relation whatever to cancer and then the possibility of a malignant change is practically eliminated. The third possibility is that the mass represents small cysts. In this circumstance there is some danger of a superimposed malignant change. The bilateral nature of the lesion is in favor of a benign process. Age is of some importance: the younger the patient, the less chance of a malignant condition. The danger signal is localization. Localized nodularity in one breast is an indication for immediate surgical exploration and microscopic examination.

EFFECTS OF LOCAL ANESTHETIC APPLIED TO EAR DRUM FOR SEASICKNESS

To the Editor:—In two recent issues of *Time* (January 16 and February 27, pp. 2 and 5) there are accounts of a treatment for seasickness applied by Major Coupal, physician to the late ex-President Coolidge. The treatment consisted of placing pledgets of cotton soaked in a solution of tutocaine or psicaine, or other non-habit forming derivative of cocaine in the ears. I am at present engaged in marine bacteriologic work which necessitates trips at sea in a small boat for periods of a few days to a week. Being susceptible to seasickness, I sometimes find my work interfered with by this unpleasantness. Can you give me any information as to the concentration in which these drugs are used and their efficacy in controlling seasickness? Will their use result in any impairment of the sense of balance? Are there any precautions to be preserved in their use? If you do not have this information at hand, perhaps you can refer me to some physician who has had actual experience with this treatment.

HERBERT W. REUSZER, New Brunswick, N. J.

To the Editor:—Is there any evidence that a local anesthetic applied to the ear drum can have an effect in seasickness? A patient sent me the clipping enclosed, which appears to involve the usual amount of journalistic misinformation. I shall be grateful to have some authoritative comment on this point. If published, please omit my name.

M.D., New York

ANSWER.—It is doubtful whether tutocaine or psicaine applied on a pledget of cotton and inserted into the ear canal would be sufficiently absorbed to have any systemic effect, as the lining of the drum head is of epidermal nature. It is quite probable that the effect was entirely psychic and due to suggestion. Even if the medicament could be absorbed by application to the drum head, there is no likelihood that it could affect the semicircular canals, disturbance of which is the cause of seasickness, as the relations of the blood supply would make a direct transference from the outer ear to the inner ear an anatomic impossibility.

No substance such as tutocaine, cocaine or psicaine, or other anesthetic, is capable of penetrating the unbroken skin. Even if there were a perforation in the drum membrane, so that the anesthetic solution could of course enter the middle ear, it has never been demonstrated that the solution would then have a definite effect on the semicircular canals.

USE OF GLANDULAR EXTRACTS TO INCREASE GROWTH

To the Editor:—Would you please advise me regarding the possibility of any of the glandular extracts increasing the growth of a man, aged 22. He is 4 feet 11 inches (150 cm.) tall, well built, normal in development, normal in sexual development, and, in fact, just a small individual. Physical examination is negative, other than a slow pulse (never above 68 when at rest). Mental examination shows an individual above the average in mentality, always good in school work, and with good business ability. He has had no serious illness, but at 11 years of age he had severe occipital headaches, not helped by glasses, but apparently relieved by the extraction of a molar tooth. An uncle was small until he was 22 years old, when he started to grow and was 5 feet 8 inches (173 cm.) tall at 28 years. The father was 5 feet 3 inches (160 cm.) tall; the mother about 5 feet 4 inches (162.6 cm.); one sister 5 feet 5 inches (165 cm.) at 12 years; one brother 5 feet 6 inches (167.6 cm.) at 16 years. The patient weighed 12 pounds (5.4 Kg.) at birth and was breast fed. His growth was apparently normal until he was 12 years old and he has not grown since. I advised him that there was little to be done, but that I would get some advice. Please omit name.

M.D., Nebraska

ANSWER.—The discussions of dwarfism occurring in the literature contain much on nosology but little on pathogenesis.

Undergrowth, or dwarfism, as applied to the individual referred to in the query, indicates a defect in growth only. Dwarfism due to defective development is spoken of as infantilism. The individual under consideration undoubtedly belongs to the group spoken of as true dwarfs.

Hanseman described a primordial and an infantile type of true dwarfism. In the latter type the individual is of normal size at birth. Growth continues for a certain period and ceases sometime between early childhood and puberty. Paltauf, about 1891, called attention to the primordial type of true dwarfism, and described such a skeleton, of an individual who died at 49 years of age, whose epiphyses had not yet completed their development. The dwarf was 45 inches (114 cm.) in height, normally intelligent, had good heredity, and the thyroid gland was normal. It has been maintained that this type of dwarf may begin to grow in adult life. Thus it is recorded by Paltauf that two increased in height as late as their thirtieth year. This may be explained by the persistence of the immature type development of the epiphyses.

In most of the cases described belonging to the primordial, or Paltauf, type the intelligence remains normal. The etiology is obscure, while the retarded development of the epiphyses may in some way be associated with the failure to grow. Nevertheless, what causes the delay in the development of the epiphyses?

True dwarfism does not seem to depend in any demonstrable way on endocrine dysfunction. All studies have failed to show involvement of either the hypophyseal or the thyroid gland.

EXERCISES FOR SPASTIC PARALYSIS DUE TO CEREBRAL HEMORRHAGE IN CHILD

To the Editor:—Please recommend appropriate exercises for a boy, aged 4½ years, with a residual spastic paralysis of both legs and the right arm, following hemorrhagic cerebral injury at birth. The gait is spastic with relatively little tendency to scissoring. The feet are inverted and rotated in. The heels come down well and there is no flexion deformity of the knees. Sphincter control is good. What may be expected of a Stöffel operation in this case and what would be the optimal age? Would this operation eliminate the remains of the scissoring?

J. E. REEVES, M.D., Norfolk, Va.

ANSWER.—Appropriate exercises must be outlined to fulfil the requirements of the individual case. A standardized group of exercises cannot be applied to spastic paralysis. It is necessary to examine the muscular action of each joint in order to ascertain the strong or dominant groups from their antagonists. The exercises are then outlined to increase the power of the antagonists and thereby lessen the power of the deforming groups.

Exercises should consist of individual muscle contractions and group muscle contractions both in and out of water. For the types of exercises applicable to the various joints and for a method of muscle examination, the correspondent is referred to the chapter on Muscle Training in Jones and Lovett's Textbook of Orthopaedic Surgery, New York, William Wood & Co. In a monograph by Dr. Loyal Davis in volume 2 of the Principles and Practice of Physical Therapy, published by Prior and Company, the following references are given:

Franz, S. I.; Sheetz, Mildred E., and Wilson, Anita A.: The Possibility of Recovery of Motor Function in Long-Standing Hemiplegia, *THE JOURNAL*, Dec. 18, 1915, p. 2150.

Crothers, Bronson: Birth Injuries of the Central Nervous System, in *Medicine Monographs*, volume 2, Baltimore, Williams and Wilkins Company 1927.

Frankel, H. S.: The Treatment of Tabetic Ataxia by Means of Systematic Exercise, English edition translated and edited by L. Freyberger, Philadelphia, 1902.

The most important phase of spastic therapy is exercises. If contractures or deformities are present, the exercises will be of no avail because of these hurdles. It will be necessary to correct these contractures and deformities to permit proper exercising. The Stöffel operation is one of the means of overcoming these obstacles.

The most suitable age is 5 or 6 years, because the child will be old enough to cooperate in the performance of the exercises, which cooperation is so valuable as a postoperative measure. The Stöffel operation will eliminate the remains of scissoring only if the scissoring is caused by spasticity of the adductor muscles of the hips. If it is caused by contracture of these muscles, it will be necessary to do myotomies at the same time.

STERILIZATION OF CATGUT ENDS

To the Editor:—Is there any way to sterilize satisfactorily ends of catgut saved from one operation for future operations? Please omit name and address.

M.D., India.

ANSWER.—Catgut ends may be sterilized, after rinsing in water, by immersing them in 95 per cent alcohol for from two to five days. If desired, a few drops of iodine may be added to the solution. Such pieces may then be used safely for ligatures and sutures preferably in operations close to the surface, such as repair of lacerations, perineorrhaphies and hemorrhoids instead of intra-abdominally, because the washing in water and the use of alcohol may reduce the tensile strength of the catgut.

USE OF IODINE POWDER IN NOSE

To the Editor:—I wish to use 4 per cent iodine in a powder combination to be carried by hot air into the antrum. How much iodine could one use with safety, provided the patient has been previously tested on potassium iodide to determine the absence of an idiosyncrasy? Please omit name.

M.D., Washington.

ANSWER.—Iodine is both a powerful germicide and a marked irritant to the mucous membrane of many persons. It is perhaps advisable, therefore, to use the iodine powder in combination with boric acid in concentrations of 1 or, at the most, 1.5 per cent. It is difficult to say how much powder could then safely be carried into the antrum. Only a small amount should at first be used until the tolerance of the patient can be well established.

EXAMINATION OF FUNDUS OF EYE

To the Editor:—What is the best equipment now available for examination of the fundus of the eye in red-free light? This would preferably be as compact and as inexpensive as possible. Please omit name and address.

M.D., Minnesota.

ANSWER.—The words "compact" and "inexpensive" must be forgotten in the discussion of examination of the fundus of the eye in red-free light. The instrument of greatest availability is the Friedenwald ophthalmoscope with its glass filter. For the average clinical examination, this is perfectly satisfactory, but for careful study of the yellow macula the light is not as red free as might be desired. Somewhat more cumbersome is the ordinary arc lamp, such as is used for dark field microscopic studies, armed with a red-free filter. This may be either a Wratten filter (made by the Eastman Kodak Company) or a glass cell with the well known cobalt blue solution. The arc lamp must have a condensing system so that the emergent beam consists of practically parallel rays, which are then reflected into the eye by the ordinary reflecting ophthalmoscope. The self-luminous ophthalmoscopes with red-free filters are, with the exception of the Friedenwald, entirely inadequate.

DRIED SERUM IN BLOOD TESTING

To the Editor:—I shall be greatly obliged if you will inform me of the advantages and disadvantages of the use of dry standard serum for blood grouping. Please advise me in which cases it is better to use the dry standard serum. I shall greatly appreciate receiving this information, also titles and authors of any literature, American or European, on the subject. Please omit name and address.

M.D., New York.

ANSWER.—There are no advantages in using dried test serum for blood grouping. In addition to the necessity of making proper solution of the dried serum comes the fact that it may have undergone deterioration. There are no cases in which it would be better to use dried serum on account of the nature of the case. The subject of blood grouping is considered thoroughly from all points of view in the following books:

Snyder, Laurence H.: Blood Grouping in Relation to Clinical and Legal Medicine, Baltimore, Williams & Wilkins Company, 1929.

Lattes, Leon: Individuality of the Blood in Biology and in Clinical and Forensic Medicine, translated by L. W. Howard Bertie, New York, Oxford University Press, 1932.

Steffan, Paul: Handbuch der Blutgruppenkunde, Munich, J. F. Lehmanns Verlag, 1932.

"ALBUMINURIA IN YOUNG ADULT"

To the Editor:—In Queries and Minor Notes (THE JOURNAL, April 29), treatment was outlined for albuminuria in a young adult. When there are no casts in an albumin-free morning specimen I have been advising generous protein diet with apparent benefit. In one case, casts in the day urine disappeared but this may have also been due to previous removal of the focus. Please advise whether you have anything on high albumin intake in these cases. Please omit name.

M.D., Washington.

ANSWER.—When by repeated urine and physical examinations the diagnosis of orthostatic albuminuria can be made with reasonable certainty, no restriction in diet is necessary or desirable. If, on the other hand, a presumptive diagnosis of nephritis is made, the usual practice is to limit or prohibit a protein diet. It is true that in nephroses many clinicians give the so-called Epstein diet, which is high in protein substance. It is also true that in some clinics higher protein diets than have been customarily sanctioned by general usage have been tried in cases of chronic nephritis. The results of this newer dietary treatment of chronic nephritis are not known and should be considered to be in the experimental stage.

EPILEPSY IN ADOLESCENCE

To the Editor:—A girl, aged 14, has been menstruating regularly for the past six months. Over the same period there have been progressive epileptic seizures beginning first as the jacksonian type but now generalized, with loss of consciousness. The child has been growing rapidly, she is tall and ungainly, and the facies is rather dull, with a nervous, foolish, embarrassed expression. The previous history was good, with normal advancement in school, no positive history in the family, and no trauma. Please give the probable cause for these seizures and outline the treatment.

M.D., Texas.

ANSWER.—The data given would lead one to think that the attacks are of the usual epileptic type and that the patient may come to have ordinary epilepsy. However, it is not uncommon for such attacks to last several months or a year or two and then cease. The treatment ought to be the same as for a case of full-fledged epilepsy. At least 0.1 Gm. (1½ grains) of phenobarbital should be given daily and the easiest way is to give it at a single dose in the evening.

Council on Medical Education
and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. Application should be filed before August 1. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

CALIFORNIA: Regular. Los Angeles, July 24-27. Reciprocity. Los Angeles, July 24. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: Endorsement. Hartford, July 25. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SOUTH DAKOTA: Watertown, July 18. Dir., Dr. P. B. Jenkins, Pierre.

WASHINGTON: Basic Science. Seattle, July 13-14. Regular. Seattle, July 17-18. Dir., Mr. Harry C. Huse, Department of Licenses, Olympia.

Tennessee March Report

Dr. H. W. Qualls, secretary, Tennessee State Board of Medical Examiners, reports the written examination held in Memphis, March 23-24, 1933. The examination covered 8 subjects. An average of 75 per cent was required to pass. Twenty-eight candidates were examined, all of whom passed. Three candidates were licensed by endorsement and one by special exemption. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|--------|------------|----------|
| Georgetown University School of Medicine..... | (1929) | | 81.4 |
| Tulane University of Louisiana School of Medicine..... | (1932) | | 89.8 |
| University of Tennessee College of Medicine..... | (1930) | | 82.9 |
| (1933) 79.1, 79.4, 79.8, 80, 80, 80.1, 81, 81.3, 81.5, | | | |
| 81.6, 82, 82, 82, 82.1, 82.5, 82.8, 83, 83.6, 84.6, | | | |
| 85.5, 85.8, 86.5, 87.4, 91.5 | | | |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|--|-------------------------|------------|----------------|
| University of Arkansas School of Medicine..... | (1927) | | Arkansas |
| Rush Medical College..... | (1930) | | Illinois |
| University of Louisville School of Medicine..... | (1924) | | Kentucky |

LICENSED BY SPECIAL EXEMPTION

Nongraduate

Wisconsin January Report

Dr. Robert E. Flynn, secretary, Wisconsin State Board of Medical Examiners, reports the written and practical examination held in Madison, Jan. 10-12, 1933. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Thirteen candidates were examined, 11 of whom passed and 2 failed. Sixteen physicians were licensed by reciprocity with other states and 1 physician was licensed by endorsement. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|-------------------|------------|----------|
| University of Colorado School of Medicine..... | (1931) | | 81 |
| Loyola University School of Medicine..... | (1932) | | 81 |
| Northwestern University Medical School..... | (1932) | | 83 |
| Rush Medical College..... | (1930) 83, (1932) | | 84, 86 |
| Washington University School of Medicine..... | (1931) | | 80 |
| University of Wisconsin Medical School..... | (1931) 80, 87, 87 | | 84 |
| Osteopath | | | |

| College | FAILED | Year Grad. | Per Cent |
|---|--------|------------|----------|
| Julius-Maximilians-Universität Medizinische Fakultät, Germany | (1925) | | 66 |
| Osteopath | | | 62 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| University of Colorado School of Medicine..... | (1931) | | Colorado |
| Bennett Medical College, Chicago..... | (1913) | | Illinois |
| Loyola University School of Medicine..... | (1916)* (1931) | | Illinois |
| .. | (1932) | | Illinois |
| .. | (1929) | | Michigan |
| .. | (1914) | | Illinois |
| .. | (1923) | | Kansas |
| .. | (1932) | | Minnesota |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|---|-------------------------|------------|----------------|
| National University of Arts and Sciences Medical Department, Missouri | (1916) | | Missouri |
| University of Nebraska College of Medicine..... | (1926) | | Nebraska |
| Osteopath | Iowa, 2, Michigan, | | Missouri |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|--|-------------------------|------------|----------------|
| University of Oregon Medical School..... | (1931) | | N. B. M. Ex. |
| * Licenses withheld. | | | |

Kentucky Reciprocity and Endorsement Report

Dr. A. T. McCormack, secretary, State Board of Health of Kentucky, reports 11 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement from Jan. 1 to May 25, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|---------------------------|------------|------------------|
| Univ. of Cincinnati College of Med. | (1928), (1930), (1932, 2) | | Ohio |
| Univ. of Tennessee College of Medicine | (1931, 2), (1932) | | Tennessee |
| Vanderbilt Univ. School of Med. | (1928) Alabama, (1929) | | Tennessee |
| Medical College of Virginia | (1928) | | W. Virginia |
| University of Toronto Faculty of Medicine | (1924) | | Minnesota |

| College | LICENSED BY ENDORSEMENT | Year Endorsement Grad. | of |
|--|-------------------------|------------------------|--------------|
| Yale University School of Medicine | (1925) | | N. B. M. Ex. |
| Vanderbilt University School of Medicine | (1931) | | N. B. M. Ex. |

Book Notices

Fungous Diseases: A Clinico-Mycological Text. By Harry P. Jacobson, M.D., Attending Dermatologist and Member of the Malignancy Board, Los Angeles County General Hospital. With Introduction by Jay Frank Schamberg, M.D., Professor of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania, and Howard Morrow, M.D., Clinical Professor of Dermatology, University of California Medical School. Cloth. Price, \$3.50. Pp. 317, with 153 illustrations. Springfield, Ill., and Baltimore: Charles C. Thomas, 1932.

Any author would be fortunate in having either one of the flattering introductions written by such distinguished men as Dr. Schamberg and Dr. Morrow, but to have two such introductions in his volume is honor indeed. Reviewing the great developments in medicine due to such giant intellects as those of Pasteur, Lister, Koch, Roentgen, Ehrlich, the Curies, Dean and Wrenshaw, Dr. Morrow, in bringing the progress of medicine down to date, says: "This is what Dr. Jacobson has done in his treatise on Mycology. It comes to the medical world as a new departure in an hitherto uninvestigated branch of medicine. Most books on dermatology written in Europe treat the subject lightly; few books in America treat of the subject at all." One wonders what is meant by the statement that the book "comes to the medical world as a new departure in an hitherto uninvestigated branch of medicine." Such a statement not only invites but demands comparisons. "Les teignes," which was published by Sabouraud in 1910, and which is still the Bible of mycology, is now out of print. "Dermatomykosen" (volume 11 of the Handbuch der Haut- und Geschlechtskrankheiten) was published in 1928. One has only to glance through the latter book to be impressed by the enormous amount of investigative work that has already been done in mycology. The statement that "few books in America treat the subject at all" is surprising in view of the fact that Ormsby in "Diseases of the Skin" (1927) devotes eighty-three pages to the mycoses, which is almost a third as much material as is in Jacobson's whole book. Andrews in "Diseases of the Skin" (1930) devotes fifty-eight pages to the subject.

To quote Dr. Morrow in one more sentence, "Adding to his art of observation and his years of skilful practice his power of accurate recording, Dr. Jacobson, the successful physician, is now welcomed as the authentic author." What is meant by authentic author? Does it mean "of approved authority"? Despite the thoroughness of the bibliographic work in "Dermatomykosen," the only reference one finds to the author's work is to an article on granuloma coccidioides. Of the illustrations, about sixty-five are the author's, of which about fifty are on deep mycoses only. About eighty illustrations have been lent by American workers, and six by German publishers. Practically all of these eighty-six illustrations are in the dermatomycoses chapters. If a medical student were so unfortunate as to have one of the American textbooks, whatever that one may be, which does not treat of the mycoses, and were obliged to depend on this volume, he would remain in ignorance of such vital subjects as trichophytids, microsporids, dermatophytids and trichophytin. And if he were to become interested in the work of Americans he would find no mention of Charles Mallory Williams, none of Hodges, Lane, Wende or Sulzberger, and only one reference to Weidman. If interested in foreign workers he would find no mention of Priestley, only one reference to Kaufmann-Wolf, spelled in the index Kaufman, and only one to Jadassohn, spelled in the index Jadessohn.

If the medical student wanted to read up on the technic of epilation, to which Andrews devotes thirteen and one-half pages, he would be enlightened as follows:

The accepted method of therapy of ringworm of the beard is a combination of x-rays to the lesions and thallium acetate by mouth. The technique of the treatment consists of ascertaining the patient's weight (nude), and then, administering by mouth thallium acetate (3 mg. per kilo of body weight) in one dose and on an empty stomach. This is followed, the same day, by roentgenotherapy.

The primary purpose of this combined method of treatment is to cause complete epilation of the affected hair without the risk of producing cutaneous atrophy. Without the oral administration of thallium acetate, the required x-ray dosage for epilating purposes is much greater and therefore more risky from the standpoint of the possibility of an ensuing radiodermatitis with resulting atrophy.

When the involvement is limited to a single patch, the following factors are usually employed: 9 inch spark gap (137 K. V.) 5 mamp., 3 mm. al. filter, 10 inches distance, 6 minutes time. When the infection is more widespread and there are several areas to be rayed, with the consequent possibility of overlapping, the time element should be reduced to about 5½ minutes for each area treated. Epilation usually takes place seven days after treatment.

All cases of tinea capitis of limited involvement or with extensive involvement, but approaching the age of puberty (12 to 15 years old), should be treated by conservative methods of local medicinal applications in accordance with any of the above outlined schemes. Young patients with extensive involvement and all types and degrees of favus of the scalp should receive the benefit of epilating doses of x-ray (Kienböck-Adamson method), with or without thallium acetate by mouth, as described under the treatment for tinea barbae.

No mention is made that the correct dose of thallium acetate epilation without roentgen rays is 8 mg. per kilogram of body weight. The upper age limit of safety for thallium acetate is now looked on as nearer 10 years than 15. No attempt is made to describe the exceedingly difficult Kienböck-Adamson technic.

For the treatment of onychomycoses the medical student would read on page 72 that "bathing the parts for thirty minutes at night and morning in merthiolate solution (1:3) have produced satisfactory results in two patients with onychomycoses."

The book is well printed on good paper. The illustrations for the most part are excellent. The proof reading, especially of the index, as the examples quoted show, is poor. The chapters on the deep mycoses are excellent. The author speaks with authority on granuloma coccidioides, but the reader gets the impression that the chapters on the dermatomycoses were written with a less sure hand.

Die Behaarung des Menschen: Eine sexual- und konstitutionswissenschaftliche Abhandlung. Von Dr. Oskar F. Scheuer, Hautarzt, Facharzt für Sexualstörungen und Geschlechtsleiden. Nr. 17, Monographien zur Frauenkunde und Konstitutionsforschung. Fortsetzung der Monographien zur Frauenkunde und Eugenik, Sexualbiologie und Vererbungslehre. Herausgegeben von Dr. Max Hirsch. Paper, Price, 6 marks. Pp. 93, with 17 illustrations. Leipzig: Curt Kabitzsch, 1933.

More and more, German investigators are concerning themselves with the constitution of man in relationship to sex, disease, inheritance and similar factors. The present monograph is concerned entirely with the subject of hair, its distribution about the body in various races, the growth of dog-faced boys and bearded women, the physiology of hair growth, the growth of customs and psychologic attitudes, the effects of various disorders of the glands of internal secretion, and many similar topics. Attention is also paid to depilation, hair fetishism and magic. A bibliography supplements the monograph.

Criteria for the Classification and Diagnosis of Heart Disease. By the Criteria Committee of the Heart Committee of the New York Tuberculosis and Health Association, Inc.: Joseph H. Bainton, M.D., Robert L. Levy, M.D., Arthur C. DeGraft, M.D., and Harold E. B. Pardec, M.D., Chairman. Approved by the American Heart Association. Third edition. Cloth. Price, \$1. Pp. 131, with illustrations. New York: New York Tuberculosis and Health Association, 1932.

This work is an elaboration of the pamphlets issued from the same source dealing with radiologic and electrocardiographic diagnosis. The latter subjects are included in the present work as an appendix. The remainder of the book is devoted to developing a nomenclature for cardiac diagnosis. The criteria for diagnosis in each division are set forth following a discussion of that particular division. The etiologic diagnosis is considered under fifteen headings. The anatomic diagnosis is divided into four main headings and forty-seven subdivisions. The physiologic diagnosis is discussed in twenty-one divisions with nineteen subdivisions. Changes in the electrocardiogram also are considered here. The functional capacity of the damaged is discussed as well as possible heart disease

and potential heart disease. The discussion is short, terse, and generally acceptable. A few statements will not go unchallenged. Not all will agree that cardiac enlargement will result from thyroid disease, nor will every one subscribe to the unqualified statement that auricular fibrillation and flutter are the result of a circus movement. Generally speaking, however, the adoption of such a uniform nomenclature would greatly simplify the interchange of ideas in cardiac diagnosis.

The Rise of Preventive Medicine. By Sir George Newman, K.C.B., M.D., F.R.C.P., Chief Medical Officer of the Ministry of Health. University of London, Heath Clark Lectures, 1931, Delivered at the London School of Hygiene and Tropical Medicine. Cloth. Price, \$3. Pp. 270, with 8 illustrations. New York & London: Oxford University Press, 1932.

It is impossible to separate the rise of preventive medicine from the history of medicine generally. Most of our knowledge of public health has been derived from scientific medicine, although knowledge essential to public health work has come also from many related fields. Thus the history of the rise of preventive medicine, presented by Sir George Newman in the University of London Heath Clark Lectures, is a reflection of medical history generally. It begins with a discussion of folk lore, magic, custom and religion, considers next the rise of hygienic practices of the Egyptians and the ancient Hebrews, then the transition to Greece, the period of the Middle Ages, the Renaissance, the rise of anatomy, physiology, pathology and bacteriology, and finally the application of these discoveries to preventive practices. The ten chapters of the book therefore constitute ten significant lectures surveying the entire field of medicine. The book is written in an easily readable style and is beautifully illustrated with some fine plates. There is one aspect of the subject that is not thoroughly elucidated in this work. It is the contribution of American organizational methods to standardization and practice of preventive medicine on a large scale, the type of effort carried on by the International Health Board of the Rockefeller Foundation. Moreover, the only reference to the magnificent work of the Walter Reed Commission and to Gorgas's contribution is the single sentence "The stamping out of yellow fever on the Panama isthmus by Surgeon General Gorgas is one of its [preventive medicine's] triumphs." Notwithstanding any omissions, which perhaps the preparation of this book in lecture form made necessary, it is an inspiring and worth-while contribution to its field.

A Critique of Sublimation in Males: A Study of Forty Superior Single Men. By W. S. Taylor. Genetic Psychology Monographs, Child Behavior, Animal Behavior, and Comparative Psychology. Volume XIII, No. 1. Paper. Price, \$2. Pp. 115. Worcester, Massachusetts: Clark University, 1933.

This thesis is an attempt to find out the extent to which superior men sublimate their physical desires, and in that way to contribute further to knowledge of masculine sexuality. The men selected were between the ages of 20 and 40. The questionnaire method was used in obtaining information, and checked by various other methods five years later. The book concerns particularly the attitude toward masturbation, relationships to women and the general psychology of sex. The book does not find any solution for the problem of sex in the young adult male. There are both advantages and disadvantages for any form of adjustment. The author is inclined to believe that early marriage is the best way, but there seem to be plenty of disadvantages associated with that. It is evidently the best way from the sexual point of view but neglects other important factors. The author is inclined to recommend early marriage according to Judge Lindsey's formula, with legalized birth control and the right to divorce by mutual consent for childless couples without payment of alimony.

The Medical Annual: A Year Book of Treatment and Practitioner's Index. Edited by Carey F. Coombs, M.D., F.R.C.P., and A. Hendle Short, M.D., B.Sc., F.R.C.P. Fifty-fifth Year, 1932. Cloth. Price, \$6; 20/- Pp. 674, with 260 illustrations. Baltimore: Williams & Wilkins Company; Bristol: John Wright & Sons, Ltd., 1932.

The Medical Annual begins with a review of its past, including a great series of portraits of present and past contributors. The remainder of the book is essentially a dictionary of medicine prepared by many writers, who call attention to recently published articles. In the introduction, the authors point with pride to new material on the use of inhalations of carbon dioxide, new studies of the blood, the use of cortin in Addi-

son's disease, and changes in the methods of treating meningitis, scarlet fever and dysentery. In their comparison of various hypnotics they insist that chloral hydrate and barbital are the cheapest and best of the nonalkaloidal hypnotics and they recommend smaller doses than are ordinarily used; namely, $2\frac{1}{2}$ grains (0.16 Gm.). Attention is also paid to new points of view in gynecology, one of the points being that cresol as an antiseptic is better replaced by brilliant green in obstetric antisepsis. The authors seem to believe that the injections of lead selenide in inoperable cancer are useful. Certainly, a review of the volume indicates that the contributors are not chosen because of therapeutic nihilism. Exceedingly valuable are a series of supplements dealing with new pharmaceutical preparations, new appliances, a list of books published during the year, a list of the mental institutions in Great Britain and a directory of trades.

Behavior Mechanisms in Monkeys. By Heinrich Klüver. Behavior Research Fund and Institute for Juvenile Research. With an introduction by K. S. Lashley. Cloth. Price, \$4. Pp. 337, with 52 illustrations. Chicago: University of Chicago Press, 1933.

In his introduction to this volume, K. S. Lashley points out that the most immediate value of such an investigation is to lay a foundation for further studies of the neurophysiology of behavior. Experimental neurology, he says, has made little progress toward an understanding of the mechanisms of thinking for lack of an adequate knowledge of the normal behavior of the animals studied. Apparently the basic investigations of the behavior of monkeys have opened the way to a more fundamental attack on the disturbances of human thinking. It is learned from such studies that there are certain patterns of response which are not affected by changes in environment, that actions depend on one another and that there are mechanisms rather than single stimuli which determine the responses of both animals and men to various situations.

Medicine and the State: The Relation Between the Private and Official Practice of Medicine With Special Reference to Public Health. By Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P. With foreword by William H. Welch, M.D., LL.D. Cloth. Price, \$3.50. Pp. 300. Baltimore: Williams & Wilkins Company; London: George Allen & Unwin, Ltd., 1932.

In its propaganda on behalf of state medicine, the Milbank Memorial Fund has been utilizing Sir Arthur Newsholme for travels, publicity and publications. The present volume is part of a series on Medicine and the State developed under these auspices. The book is, in general, a brief against private practice. The thesis of the book is that sickness insurance supported jointly by employers, employees and the state is necessary for satisfactory medical care of populations. The author endorses heartily an insurance scheme supported by employers and employees but to a certain extent by the state and under the supervision of the state. He also supports particularly compulsory rather than voluntary health insurance.

Précis de chimie physiologique. Par Maurice Arthus, correspondant national de l'Académie de médecine de Paris, et André Arthus, privat-docent de physiologie à l'Université de Lausanne. Eleventh edition. Cloth. Price, 65 francs. Pp. 322, with 116 illustrations. Paris: Masson & Cie, 1932.

When the first edition of this work was published, in 1895, it filled a gap between the fields of physiologic chemistry, strictly speaking, and medicine, particularly physiology. The physician of that day received little enlightenment from his contemporary textbooks on physiologic chemistry, which were busily engaged in classifying discoveries in pure chemistry. He learned little from the tracts on physiology, which included at best a chapter or two in recognition of the chemical application to bodily processes. In this dilemma, Dr. Arthus decided to summarize the chemical facts of physiology in health and disease. The present is the eleventh edition of a summary representing the elementary and essential facts of physiologic chemistry which the student of physiology must master. It has been translated into four languages. There are twenty-three chapters covering every division of such subjects as foods, ferments, body fluids and body tissues. The detail into which this unassuming epitome engages is illustrated by chapters on solutions and cryoscopy, gas metabolism, milk, hormones and antibodies. Each chapter is preceded by a brief summary of its contents, making the material unusually accessible. The work abounds in chemical formulas and illustra-

tions of the subject matter as well as typical laboratory apparatus with which the reader should become familiar. Added to the text are excellent colored plates illustrating spectroscopic pictures of blood, analysis of common foods and urinary tests. Although its author has striven to elucidate only elementary and fundamental considerations, the volume has achieved reference proportions. This work should be of inestimable value to the student and physician familiar with French for its clarity, conciseness and completeness.

The Rheumatic Infection in Childhood. By Leonard Flindlay, M.D., D.Sc., M.R.C.P., Visiting Physician, East London Hospital for Children, Shadwell. Cloth. Price, \$3.50. Pp. 187, with illustrations. New York: William Wood & Company, 1932.

This book summarizes the author's experience as physician to the Royal Hospital for Sick Children in Glasgow during the years 1914-1930. It is remarkable in that the author was able to trace 693 out of 701 children during that period. The survey covers all aspects of the subject—incidence, etiology, various of the manifestations of rheumatism, chorea, arthritis, carditis, the subcutaneous rheumatic nodule, skin, pulmonary, kidney and abdominal lesions, prognosis and treatment. It is an excellent modern presentation of the subject by a skilled experienced clinician. A number of his conclusions are interesting and stimulating: "The present day view is that it is a chronic disease with acute exacerbations and hence somewhat akin to tuberculosis. . . . In any case, whatever the conclusion to be drawn from the figures relative to England and Wales, there is absolutely no evidence that in the west of Scotland rheumatic fever and chorea are becoming any less prevalent. . . . "It has long been suggested that certain types of children are susceptible to the infection as, e. g., the red haired and blue eyed. . . . It is comparatively rare to meet with it [acute rheumatic fever] among the children of the well to do. . . . Dampness of the home did predispose to the disease. . . . Like all the manifestations of the rheumatic infection, arthritis is more frequent in girls than in boys." The author's statistics on prognosis emphasize again the seriousness of the rheumatic infection: "Of those infected during childhood, about one third escape involvement of the heart. By about ten years after the onset of the infection, distinctly more than a third of the patients will have died from the severity of the cardiac implications. One third of the cases will be more or less incapacitated. . . . The death rate from rheumatic cardiac disease reaches its maximum incidence during the age period 35-45 years." The chapter on treatment is equally authoritative. The author keeps "any example of active rheumatic mischief in bed for at least three months and longer if circumstances demand." This is a scholarly, conservative presentation of acute rheumatic fever—essentially clinical—based on a prolonged and wide experience at the bedside of the rheumatic child. It can be unqualifyingly recommended to all those interested in this still unsolved problem of childhood.

Nouveau traité de médecine. Publié sous la direction de G. H. Roger, Fernand Vidal et P. J. Teissier. Secrétaire de la rédaction: M. Garnier. Fascicule X: Pathologie de l'appareil circulatoire (cœur et vaisseaux). Tome I: Cœur (première partie). Tome II: Cœur (deuxième partie). Boards. Price, 135 francs; 115 francs. Pp. 991, with 512 illustrations; 780, with 123 illustrations. Paris: Masson & Cie, 1933.

Several authors contribute to the two volumes on disease of the heart, which constitute only a section of this comprehensive system on clinical medicine. The first volume contains exhaustive discussions on anatomy, physiology, methods of examination, angina pectoris, and the general principles of treatment. Each topic is dealt with in great detail and is amply illustrated by diagrams and by reproductions of photographs. Unfortunately, the chapter on roentgenology is illustrated by diagrammatic sketches: reproductions of actual films would have added materially to the value of this part of the book. The section on electrocardiography includes a mass of detail concerning the more fundamental aspects of this diagnostic procedure which hardly belong in a book on clinical medicine. Lutembacher, who contributed most of the material comprising the first volume, in discussing cardiac failure, adheres to the traditional French conception of right and left ventricular insufficiency. The chapters on pharmacology of cardiac drugs and on treatment in general are well written and should prove interesting

to those not familiar with the methods employed on the "continent."

The second volume opens with a discussion on pericarditis and is followed by equally well balanced presentations on endocarditis, valvular disease, myocardial abnormalities, coronary occlusion and other less common conditions. The manner in which the various subjects are presented can well serve as a model for books on internal medicine. The clinical descriptions usually begin with a striking opening statement, a method so ably employed by Osler, in which is revealed as if by a flash the accumulated experience of years at the bedside. The opening paragraph describing the symptoms of coronary thrombosis will serve as an example:

The manifestations of myocardial infarct are characterized essentially by an ensemble of very severe symptoms which begin with great brutality. The clinical picture is dominated by an overwhelming anginal pain of very long duration and by cardiovascular collapse with fall in blood pressure, hypodynamic myocardium and frequently with arrhythmia. To these are added fever which is moderate but always present, leukocytosis; a pericardial reaction which is localized but ephemeral, certain gastro-intestinal symptoms and fairly characteristic electrocardiographic changes.

The scope of the work is practically beyond the efforts of a single author. These two volumes, by several contributors, contain the virtues and drawbacks usually found in any large system of medicine. Most subjects are treated skilfully and in a manner calculated to be of practical help to the clinician. Other chapters, dealing with more theoretical aspects, are perhaps overemphasized and discussed in far too great detail for a book on clinical medicine. In spite of these few possible faults, there is sufficient excellent material to make this an unusually valuable addition to any library.

The Medical Secretary. By Minnie Generleve Morse. Cloth. Price, \$1.50. Pp. 162. New York: Macmillan Company, 1933.

This is a volume of useful suggestions for doctors' secretaries. It gives the kind of information that most people with common sense can find out for themselves. Presuming that the secretary starts from scratch, the book may be useful to her. There are so many individual preferences among doctors as to the ways in which they want their case records kept, their patients met, their bills sent, their literary research developed, and even their manuscripts prepared, that it will take a clever secretary to adapt what she finds out in this book to the uses of her employer. The information is on no subject complete or even authoritative.

Le pèlerinage de la Mecque au point de vue religieux, social et sanitaire. Par le Docteur Duguet, Inspecteur général du conseil sanitaire, maritime et quarantenaire d'Égypte. Avec une préface de Justin Godart. Paper. Price, 30 francs. Pp. 337, with illustrations. Paris: Les Éditions Rieder, 1932.

Duguet presents an interesting book dealing with the pilgrimage to Mekka from the religious and social as well as the sanitary points of view. The first part, covering 117 pages, deals with the origin of the pilgrimages, their general religious and social aspects, the methods of transportation and the religious ceremonies in the holy city. This section is filled with information of interest for the general reader and is written with a broad and sympathetic understanding of the religious faith of the pilgrims. The second part deals with the sanitary aspects of the pilgrimage and recites the epidemics of plague, dysentery, typhoid and especially cholera which have taken such a heavy toll of life among the pilgrims. Many official documents have been reviewed in order to present the data dealing with the twenty-seven epidemics of cholera which occurred in Hedjaz in the space of eighty-one years from 1831 to 1912, seventeen of which took place in the last fifty-two years of this period. The last twelve of these were attended by a mortality of more than 70,000 pilgrims in the holy cities alone. There are several chapters dealing with the steps taken by the various international sanitary conferences with regard to these epidemics, since they have menaced the health of a large part of the world. Thus the author presents an authoritative and comprehensive recital of the sanitary history of the pilgrimages, a review of the progress made, and a discussion of measures that are yet to be taken. The book should have an appeal not only for those interested in the public health aspects and epidemiology of medicine but for the profession as a whole.

Forty Years of Psychiatry. By William A. White, A.M., M.D., ScD. Nervous and Mental Disease Monograph Series, No. 57. Boards. Price, \$3. Pp. 154. New York & Washington: Nervous & Mental Disease Publishing Company, 1933.

The author of this autobiography has had a long and useful career in the field of psychiatry. He tells here the details of his introduction into the field, his progress in various institutions, his first association with St. Elizabeth's Hospital in Washington in 1903, and the development of psychiatry since that date. Abroad he studied with Jung, Kraepelin, von Monakow and others. He considers the development of hydrotherapeutic methods, psychoanalysis, in which he has been a distinguished leader, and the growth of the mental hygiene movement. The relationship of psychiatry to crime is given special attention. There is also a chapter on hospital administration based on his own extensive experience. It is interesting to know that the tastes of the insane in literature are practically the same as those of the general population. Dr. White does not feel that the future, at least the near future, offers any glowing possibilities in controlling the problem of the mentally defective. However, the door to this subject has been opened only within the last two decades. Particularly promising, he believes, is the more effective employment of patients in large institutions leading toward self support. A concluding chapter gives Dr. White's credo. In this connection he feels it fundamental that each individual seek out his own deficiencies before attempting to treat those of others. A profound knowledge by man of himself will have a tendency to check distorting influences and reduce them to a minimum. The book, unfortunately, lacks an index.

Les maladies de lumière et leur traitement. Par Hubert Jausson, professeur agrégé libre du Val-de-Grâce, et François Pagès. Préface du Dr Clément Simon. Paper. Price, 45 francs. Pp. 204, with 45 illustrations. Paris: Masson & Cie, 1933.

This monograph on the diseases caused by light is introduced by a description of light, the spectrum and the absorption of the different radiations under normal and pathologic conditions. The author takes up the study of sensitiveness to light and describes a large variety of illnesses caused by light. He classifies the diseases caused by light and discusses some of them as caused by different specific rays of light. He distinguishes between the red and infra-red ends of the spectrum and the violet and ultraviolet portions. The book is beautifully illustrated and because of this and the author's extensive study and experience is well worthy of translation into English and worthy of a place in the library of those who read French.

International Health Year-Book, 1930. (Volume VI). Reports (With Vital and Public Health Statistics) on the Public Health Progress of Thirty-Four Countries and Colonies in 1929. League of Nations, Health Organisation. Series of League of Nations Publications, III. Health, 1932. III. 2. Official No.: C. H. 951. Paper. Price, \$6; 24/- Pp. 1100. Boston: World Peace Foundation; Geneva: League of Nations, 1932.

These invaluable summaries of statistics are a guide to health conditions throughout the world at the time of publication. The standard tables give information concerning areas, population, sex distribution, births, death rates from various causes classified by seasons, age and sex, infant mortality, campaigns against social disease and for the protection of mothers and children, hospital statistics, health insurance funds, and so on. A considerable section of the book is devoted to the United States covering the year 1930.

Der Bandschaden des Kniegelenks. Von Dr. Karl Gebhardt, Privatdozent und Oberarzt der Sportabteilung der Chirurgischen Universitätsklinik, München (Geheimerat Lexer). Paper. Price, 4.50 marks. Pp. 59, with 21 illustrations. Leipzig: Johann Ambrosius Barth, 1933.

This small book, written from the clinic of Professor Lexer, contains anatomic consideration of the knee joint and a discussion of injuries to its ligaments. The illustrations are reproductions of photographs, line drawings and photomicrographs, and are well chosen and executed.

The Woman's Doctor. Anonymous. Cloth. Price, \$2. Pp. 307. New York: Macaulay Company, 1933.

This book is neither fish nor fowl, neither fiction nor science, neither essay nor poetry. It is just an attempt to capitalize the public's morbid interest in obstetrics, gynecology and abortions. Issued in February, the book was little noticed and has by this time been in general forgotten.

Improvised Equipment in the Home Care of the Sick. By Lyla M. Olson, R.N., General Superintendent of Nurses at the Kahler Hospitals, Rochester, Minnesota. Second edition. Cloth. Price, \$1.25. Pp. 197, with 285 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

This volume is prepared primarily for nurses. It is full of ingenious ideas, listed in alphabetical order, telling nurses how to keep patients comfortable with the kind of equipment that can be developed out of materials found around the ordinary home. A casual survey indicates that the nurse ought to take a carpenter with her for the development of some of these devices, but probably they will constitute useful methods of keeping the husband busy in case the patient is a woman. There is an interesting section dealing with the ways in which newspapers can be used to make anything from a Kelly pad to a warm seat for a bedpan. The section on restraints is interesting; also the shower bath improvised out of a wash boiler and a garden hose. The ideas in the book are fascinating if not useful. However, nurses will know that better than any medical reviewer.

The Changing Culture of an Indian Tribe. By Margaret Mead, Assistant Curator of Ethnology, American Museum of Natural History. Cloth. Price, \$4.50. Pp. 313. New York: Columbia University Press, 1932.

The author of this volume is especially well known for her previously published books in the anthropologic field, particularly those dealing with the place of women and children in the culture of savage tribes. The present volume deals with an Indian tribal community, the investigations having been made for the American Museum of Natural History. The group chosen is anonymous and is called "The Antlers," merely as a name. The tribe concerned was a Mississippi Valley tribe whose chief contact with civilization was with the Presbyterian missions in the first half of the nineteenth century. The author discusses the reservation, its economic situation, political life, religious institutions and educational situation. The remaining half of the book deals with women in the culture of the tribe, the household organization, marital situations and various maladjustments and includes case histories of twenty-five delinquent girls and women. The volume is a fine contribution to the available literature on the psychology and social-economic situations of the American Indian today.

Chapters in American Obstetrics. By Herbert Thoms, M.D., Associate Professor of Obstetrics and Gynecology, Yale University School of Medicine. Cloth. Price, \$2. Pp. 90, with 10 illustrations. Springfield, Ill.: Charles C. Thomas, 1933.

This little volume preserves the memory of great contributors to our knowledge of obstetrics. It begins with midwifery as practiced in the Colonies in the earliest days and next considers the first book on obstetrics published in this country, that of Bard. The third chapter deals with the development of the use of ergot, and following is a discussion of Dewees and the first system of obstetrics. Other chapters are devoted to the famous essay by Oliver Wendell Holmes on puerperal sepsis, the contribution of Wright dealing with cephalic version, and the use by Channing of etherization in obstetrics. The book is beautifully printed, is illustrated with fine portraits and therefore is a nice gift for any obstetrician.

Grundzüge der Kurortwissenschaft. Von Sanitätsrat Dr. S. Lachmann. Boards. Price, 5.60 marks. Pp. 133, with 2 illustrations. Leipzig: Georg Thieme, 1933.

Here is a thoroughgoing, even though small, interestingly written and yet scientific exposition of climatotherapy, with special emphasis on the therapeutic uses of mineral water resorts.

Preparation for Marriage. Edited by Kenneth M. Walker, F.R.C.S. Introduction by Logan Clendening, M.D. Cloth. Price, \$2. Pp. 175, with illustrations. New York: W. W. Norton & Company, Inc., 1933.

We are now in a well organized world, so that much of the romance of marriage is to be eliminated through complete education in advance as to all the details. This book is compiled by its editor from a number of articles by well known authorities on the subject. One can conceive a young couple working out carefully, with the aid of this volume, every step in their romantic contacts from two months before the altar to a visit to the delivery room. The psychologists, however, will be troubled as to whether or not this technocratic attitude

toward marriage is desirable for the perpetuation of the human race. In any event, sound information is in this book. It is reasonable to believe that, nature being what it is, the information will harm no one.

Medicolegal

Privileged Communications: Testimony of Physicians Unsuccessfully Attempting to Resuscitate Unconscious Patient.—Palmer went to his garage to work on his automobile. Three hours later he was found lying on the floor of the garage, unconscious, face downward, with bruises on his forehead and nose. Two windows of the garage were open, but the large doors were closed. When he was found, the motor of his automobile was running, and smoke and fumes pervaded the garage. Two physicians attempted to revive him but failed. Palmer was insured under an accident insurance policy which excluded from its coverage death from cerebral hemorrhage and from asphyxiation by carbon monoxide. Suit was brought to recover under the policy.

On behalf of the plaintiffs, two physicians testified that in their opinions, based on hypothetical questions, Palmer died, not from carbon monoxide poisoning, cerebral hemorrhage or any other condition not covered by the policy, but from concussion of the brain. The two physicians who, when Palmer was found unconscious, attempted to revive him, testified, over objection, to the presence in the body of the deceased of the cherry red color characteristic of carbon monoxide poisoning. The jury disagreed, but the court granted the defendant-insurer's motion for judgment in its favor notwithstanding the disagreement, and the plaintiffs appealed to the Supreme Court of Minnesota.

Whether the evidence of the plaintiff's two medical witnesses that the insured died of concussion of the brain withstood the test of cross-examination and was sufficient to make a case for the jury, said the Supreme Court, depended largely on whether or not the evidence established that the body of the insured presented the cherry red appearance characteristic of carbon monoxide poisoning. The coroner's testimony as to the color of the body and the blood was not conclusive, for it was not shown that he qualified as an expert with respect to such matters. The two physicians who tried to resuscitate Palmer testified, over objection, to the presence of the characteristic cherry red color, but whether their testimony was admissible depends on whether information obtained by them in the course of their professional relations to the deceased was or was not privileged. The Minnesota statute provides in part: "A licensed physician or surgeon shall not, without the consent of his patient, be allowed to disclose any information or any opinion based thereon which he acquired in attending the patient in a professional capacity and which was necessary to enable him to act in that capacity." Mason's Minn. St. 1927, section 9814, subd. 4. Most reported decisions hold that information obtained by a physician in performing an autopsy is admissible even under statutes that forbid the disclosure of communications between a physician and his patient. The present case, however, is wholly unlike one in which a physician performs an autopsy, because then the physician is present, not to treat or minister to the patient, but only to determine the cause of death. In this case, the insured was probably dead when the physicians began their treatment, but that is a matter of surmise only, deducible from the failure of treatment to resuscitate him, and in any event, the precise moment of death is not known.

If the patient had been resuscitated, anything that the physicians learned in treating him would have been privileged. If the patient was alive when they commenced treatment but died during treatment, all would agree, the Supreme Court thought, that the information obtained was privileged. How can it be different, then, said the court, in a case in which the attending physicians do not know whether the patient is or is not beyond hope of revival? To say that in such a case the admissibility of the evidence obtained by the physicians depends on the results of their treatment, rather than on the purpose of the physicians in administering treatment, would be absurd. Privilege, so far as it related to objective symptoms, the court thought,

would be largely nullified, if the physician was compelled to tell what he saw the moment after death.

In the opinion of the Supreme Court, the testimony of the physicians who attended the insured when he was found unconscious was privileged and should not have been admitted. In the absence of the evidence of those physicians, the opinions of the physicians who testified on behalf of the plaintiff, said the court, justified the theory that the insured died from concussion of the brain, and the presumption followed, in the absence of proof to the contrary, that the violence that caused the fatal concussion was the result of accidental means. The judgment of the trial court in favor of the defendant-insurer was therefore reversed.—*Palmer v. Order of United Commercial Travelers of America (Minn.)*, 245 N. W. 146.

Workmen's Compensation Acts: Death from Cerebrospinal Meningitis Compensable.—The *President Madison* arrived in Seattle, March 11, 1929, with several cases of cerebrospinal meningitis on board, which had developed in the steerage. On the same day, the deceased, a steamfitter, in the course of his employment, was on the deck of the ship, above the steerage passengers, who had been kept in their quarters. Later these passengers were removed, and the ship was fumigated, March 13. Between March 14 and 21, the deceased and others were engaged in making repairs to the ship, and on the last day he was at work in the steerage for about a quarter-hour. Between March 24 and 26, while on an automobile trip, he was tired and drowsy, and on the day after his arrival at his destination, March 27, he became ill. He died of cerebrospinal meningitis on the following day. Under the Longshoremen's and Harbor Workers' Compensation Act, an award was made in favor of his widow and minor child. From a judgment in the United States district court affirming that award, his employer, the Todd Dry Docks, Inc., appealed to the United States circuit court of appeals, ninth circuit.

The appellant did not seriously question the claimant's contention that the deceased contracted cerebrospinal meningitis on the ship and did not deny that cerebrospinal meningitis is a disease resulting from infection, within the meaning of the act, which provides:

The term "injury" means accidental injury or death arising out of and in the course of employment, and such occupational disease or infection as arises naturally out of such employment or as naturally or unavoidably results from such accidental injury, . . .

The only question to be decided, therefore, was whether the fatal cerebrospinal meningitis was the result of an injury within the meaning of the act.

The appellant admitted that the phrase "such . . . infection as arises naturally out of such employment" would include infectious diseases contracted in the course of employment, but contended that an infectious disease, to be compensable, must be based on an *occupational* infection; that is, that the phrase "such occupational disease or infection" should be construed to mean "such occupational disease or *occupational* infection." Impliedly, the appellant contended that the cerebrospinal meningeal infection in the present case was not an *occupational* infection and therefore was not compensable. The court, however, declined to accept the appellant's contention, except to the extent that the qualifying words of the statute, "infection as arises naturally out of such employment," implied an occupational relation. The court was satisfied that the death in this case resulted from an infection arising naturally out of his employment and affirmed the award in favor of the widow and minor child of the deceased.—*Todd Dry Docks, Inc., v. Marshall*, 61 Fed. (2d) 671.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
Montana, Medical Association of, Anaconda, July 12-13. Dr. E. G. Balsam, Box 88, Billings, Secretary.
Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association Library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk () are abstracted below.

American Journal of Diseases of Children, Chicago

45: 461-690 (March) 1933

- Congenital Syphilis. M. H. Roberts, Atlanta, Ga.—p. 461.
*Use of Placental Extract in Prevention and Modification of Measles. C. F. McKhann and F. T. Chu, Boston.—p. 475.
Effect of Milk and Modified Milk on Gastric Contractions. F. W. Schlutz and Dorothy Fetter, Chicago.—p. 480.
Determination of Iron Content of Blood in Children. I. P. Sobel and I. J. Dreker, New York.—p. 486.
Intestinal Infections in Infants and in Children—1930 and 1931 Series. Marion M. Johnston, A. Brown and Mildred J. Kaake, Toronto, Canada.—p. 498.
Etiology of Mongolism. R. L. Jenkins, Chicago.—p. 506.
*Elevations of Temperature in the Newly Born. L. R. DeBuys, New Orleans; H. L. Bacal, Montreal, Canada, and Amelie M. Stewart, New Orleans.—p. 520.
Motility in Young Infants: I. Relation to Body Temperature. O. C. Irwin, Iowa City.—p. 531.
Id.: II. Relation to Two Indexes of Nutritional Status. O. C. Irwin, Iowa City.—p. 534.
*Infant Nutrition: VII. Lactic Acid Milk; Has It Solved the Problems of Infant Nutrition? J. R. Gerstley, Chicago.—p. 538.
Renal Tuberculosis in Juveniles. M. F. Campbell, New York.—p. 555.

Placental Extract in Measles.—McKhann and Chu gave placental extracts, by intramuscular injection, as a prophylactic measure to forty-three children who had not experienced measles and who had come in contact with the disease. The extracts represented a concentrated preparation of the globulins of the fetal and maternal blood contained in the placenta together with some placental tissue protein. In no instance did the intramuscular administration of placental extract appear to be without effect in either prevention or modification of measles in nonimmune contacts, and in no instance was there a general or local reaction or evidence of local infection following the injection of placental extract. In these cases the effective dosage (from 4 to 10 cc., depending on the age of the patient and intensity of exposure) of the extract was slightly more than the usual dosage of convalescent serum.

Elevations of Temperature in the New-Born.—From a ten year study of the temperatures of new-born infants, DeBuys and his associates conclude that early rises of temperature are indicative of either trauma or inanition. If the peak of the temperature corresponds in time with the maximum loss of body weight, the fever is due to inanition; if there is no relation between the two except that the maximum loss of body weight follows the temperature curve, the cause is trauma. The duration of the elevated temperature in these two types of cases is from one to three days. The prolonged elevated temperatures of from three to nine days or more may be found in the diseases of the new-born and in some instances of trauma. Elevated temperatures retard the progress of the new-born, and the higher and the longer the elevated temperature, the greater its influence on retarding the progress of the infant, as shown by the excessive loss of body weight and the delayed return to the initial weight. When fever appears and there is a relation between elevated temperature and loss of body weight as well as prompt improvement following the administration of soluble carbohydrates and alkalis, the case is one of inanition. If there is no response to this treatment there must be some other influencing factor such as trauma. If there is fever without relation to loss of body weight and no response to the administration of soluble carbohydrates and alkalis, the cause is trauma, the degree of which will influence the course of the illness. It is possible that a combination of conditions may cause an elevated temperature. There seemed to be a relation between trauma and the hemorrhagic disease of the new-born in the authors' series, also between the toxemias of pregnancy and the hemorrhagic disease

of the new-born, and acute inanition has been found associated with each of the causes of elevated temperature.

Infant Nutrition.—Gerstley gave six babies feedings of breast milk, breast milk and 12 per cent lactose, whole cow's milk, whole cow's milk with 3 per cent and later 12 per cent lactose, lactic acid milk, lactic acid milk with 3 and 12 per cent lactose and 12 per cent of a maltose-dextrin preparation. The stools of infants fed lactic acid milk resembled those of infants fed whole cow's milk and not those of infants fed breast milk. It was necessary to add the same amount of lactose to whole lactic acid milk (12 per cent) as to whole cow's milk to overcome its alkalinizing effect on the stool. The addition of 12 per cent of a maltose-dextrin preparation to lactic acid milk gave no different results than when added to whole cow's milk. The urine of the babies fed whole cow's milk or whole lactic acid milk showed traces of albumin, casts and sugar more frequently than that of breast-fed infants, but these changes were transitory. In discussing the results from the point of view of the gastrointestinal tract, the analyses suggest that: 1. The digestion of whole lactic acid milk demands as much of the intestinal digestive juices as does whole cow's milk, or more. 2. The addition of lactic acid to whole cow's milk does not increase the amount of lactic acid in the intestine nearly as much as does the addition of lactose. 3. The question is reopened as to whether the benefit of the addition of acid may not be due to the lipase. The author concludes that whole lactic acid milk is as easy of gastric digestion as breast milk but that it does not alter the effects of a diet of whole cow's milk on the intestine and may not on the body; it usually leads to overfeeding, and it is a method of feeding that brings a direct challenge to the theories of metabolic injury so beneficial to the development of pediatrics during the last twenty years.

American Journal of Hygiene, Baltimore

17: 297-516 (March) 1933

- Antigenic Properties of Bacteriophage Lysates of Salmonella Supefifer: I. General Introduction and Preliminary Study of Cultures and Lytic Filtrates. Pearl Kendrick, Baltimore.—p. 297.
Id.: II. Rate of Disappearance of Injected Bacteriophage from Blood Stream of Rabbits. Pearl Kendrick, Baltimore.—p. 318.
Chemical and Immunologic Properties of Pneumococci and Other Heterophile Antigens. G. H. Bailey and Mary Shaw Shorb, Baltimore.—p. 329.
Immunologic Relationships of Pneumococci and Other Heterophile Antigens and Biologic Significance in Pneumococcus Infections. G. H. Bailey and Mary Shaw Shorb, Baltimore.—p. 358.
Standardization of Antimeniugococcus Serum: Titration of Its Neutralizing Potency by Phenomenon of Local Skin Reactivity. Grace M. Sickles, New York.—p. 412.
Modified Eijkman Test for Water Analysis. W. L. Williams, R. H. Weaver and M. Scherago, Lexington, Ky.—p. 432.
Infectious Myxoma of Rabbits. R. R. Hyde and R. E. Gardner, Baltimore.—p. 446.
Control of Poultry Coccidiosis by Chemical Treatment of Litter. J. Andrews, Baltimore.—p. 466.
Studies on Ichthyophonus Hoferi, Parasitic Fungus of Herring, Clupea harengus: II. Gross and Microscopic Lesions Produced by Parasite. G. E. Daniel, Baltimore.—p. 491.
Hydrodynamics of Mosquito Breeding Places. P. I. de Jesus, Manila, P. I.—p. 502.
Anopheles Walkeri, Theobald, as a Vector of Plasmodium Vivax, Grassi and Feletti. R. Matheson, Ithaca, N. Y.; M. F. Boyd and W. K. Strainman-Thomas, Tallahassee, Fla.—p. 515.

American Journal of Physical Therapy, Chicago

10: 1-36 (Feb.) 1933

- *Treatment of Women with Diathermy. W. S. Pugh, New York.—p. 5.
Painful Feet. W. Martin, Atlantic City, N. J.—p. 8.
The Almond in Nutrition. D. E. Lane.—p. 11.
Is Walking a Lost Art? N. D. Mattison, New York.—p. 17.

Treatment of Women with Diathermy.—Pugh states that diathermy is an ideal method for the treatment of gonorrheal infections of the urethral and cervical canals and their complications. All treatment must be conducted by a physician; it should never be entrusted to a so-called technician. Diathermy is painless, if the operator keeps within proper bounds, and the procedure is uncomplicated. The author's observations, coupled with those of others, show cure in at least 70 per cent of these cases. The basis for the application of diathermy in gonorrhea is the fact that the gonococcus is unfavorably influenced by fever. There are two forms of diathermy, the medical or sedative, with a maximum temperature of 50 C., and the surgical or destructive, used at a much higher temperature. The author uses the sedative form in the treatment of gonorrhea.

Archives of Ophthalmology, Chicago

9: 331-514 (March) 1933

- Total and Complete Keratoplasty with Conjunctival Flap. D. Katz, Chicago.—p. 331.
- Degeneration of Ganglion Cell Following Axonal Injury: Experimental Study. G. R. James, Iowa City.—p. 338.
- Lighting Without Glare: Further Contribution. C. E. Ferree and G. Rand, Baltimore.—p. 344.
- Visual Fields with Minimal Light Stimulus. L. L. Mayer, Chicago.—p. 353.
- Light Streaks on Retinal Blood Vessels. W. H. Wilmer, H. F. Pierce and J. S. Friedenwald, Baltimore.—p. 368.
- Reticular Fibers in Some Hyperplastic Diseases of Conjunctiva. M. N. Beigelman, Los Angeles.—p. 381.
- Traumatic Epithelial Cysts Within the Eye. A. Rados, Newark, N. J.—p. 392.
- Foreign Body in Orbit; Foreign Body in Anterior Chamber; Ulcus Serpens: Three Noteworthy Cases. C. B. Meding, New York.—p. 407.
- Physiologic Content of Pigment in Conjunctiva of Chinese: Some Remarks on Normal and on Pathologic Pigmentation. A. Pillat, Peiping, China.—p. 411.
- Organ Specific Properties and Antigenic Power in Homologous Species of Alpha Crystallin. E. L. Burky, A. C. Woods and M. B. Woodhall, Baltimore.—p. 446.

Archives of Otolaryngology, Chicago

17: 297-456 (March) 1933

- *Complications of Otitis Media Without Rupture of Membrana Tympani. A. A. Love, Los Angeles.—p. 297.
- Continuous Stimulation of the Labyrinth with Sustained Nystagmus. E. A. Spiegel, Philadelphia, and L. Aronson, New York.—p. 311.
- *Experimental Surgery of the Nose and Sinuses: II. Gross Results Following Removal of Intersinus Septum and of Strips of Mucous Membrane from Frontal Sinus of Dog. A. Hilding, Rochester, Minn.—p. 321.
- Tuberculous Mastoiditis in Infants and in Children: Report of Cases. J. E. Scobee, Los Angeles.—p. 328.
- Genetic Factor in Otosclerosis. C. B. Davenport, Bess Lloyd Milles and Lillian B. Frink, Cold Spring Harbor, N. Y.—p. 340.
- Irrigation of Ear in Acute Otitis Media: Is There Risk of Spreading Infection to Mastoid Cells? D. Shapiro, Paterson, N. J.—p. 384.
- *Solitary Neurofibroma of Pharynx. F. A. Figi, Rochester, Minn.—p. 386.
- Treatment of Bronchial Suppuration and Pulmonary Abscess by Bronchoscopic Drainage: Report of Cases. J. W. Miller, New York.—p. 390.

Complications of Otitis Media.—Love states that otitis media and mastoiditis with intact membrana tympani occur more frequently than is generally supposed. Infection may extend from the middle ear to the mastoid and intracranially without gross pathologic changes in the middle ear. *Streptococcus haemolyticus* is probably the most frequent and most dangerous bacterial agent in the most severe cases. Minute examination of the ear canal and drum is imperative, and any deviation from normal should be viewed with suspicion. It is important to exhaust every available diagnostic measure in order to come to an accurate conclusion. The condition is more common in children than in adults. The causes of failure in diagnosis are: (1) an insufficient history, (2) a failure to associate a distant manifestation with a possible otitis, (3) a lack of proper evaluation of minor anatomic changes in the external canal and the ear drum, and (4) an insufficient follow-up of potentially dangerous cases. Swimming is a frequent cause of this type of disease. The expression "sagging of the canal wall" should be deleted from otologic usage and the term "edema" substituted, which describes accurately its location and extent.

Surgery of the Nose and Sinuses.—From his experiments on fifteen dogs, Hilding draws the following conclusions, at least as far as the normal frontal sinus of the dog is concerned: 1. High ridges and diaphragms of scar tissue follow the removal of strips of mucous membrane on concave surfaces. 2. These ridges and diaphragms interfere with normal drainage and cause mucin to collect in pools if they are so placed that the mucin cannot readily slide around them. 3. When a complete ring of mucous membrane is removed from the inside of the sinus in any plane, dividing the remaining mucous membrane into halves, the circular scar that forms in healing may become a complete diaphragm of connective tissue, dividing the sinus into two cavities. In that case, one of the cavities subsequently becomes filled with mucin. 4. Partitions, or septums, between sinuses can be removed, and the resulting opening can be caused to remain patent, as made, if the edges of the mucous membrane on both sides of the partition are made to meet, and no strip of bone is left bare. 5. On the other hand, if at the end of the operation a bare strip of bone encircles the opening, a diaphragm forms in healing that usually closes the operative opening and makes the partition or septum intact once more. 6. The ostium

can be closed by removing a circular strip of mucous membrane from around it.

Solitary Neurofibroma of Pharynx.—Figi reports the case of a woman, aged 61, who presented herself at the author's clinic because of frequent sore throat and persistent irritation in the throat, together with partial obstruction of the left nostril. Examination disclosed extreme prominence of the left tonsil. Tonsillectomy was advised. At operation the tonsils were found to be uniform in size, the bulging on the left being due to a large, firm, somewhat irregular mass situated external to the aponeurosis. The tumor was not incised when the tonsil was removed. The growth was thought to be a carcinoma of the mixed tumor type, and removal following preliminary ligation of the external carotid artery was carried out four weeks later, with the patient under intratracheal anesthesia. Grossly, the tissue was of moderately firm consistency and yellowish. It appeared to be fibro-elastic tissue undergoing degeneration. Microscopically, the tumor was reported to be a degenerating neurofibroma. The author concludes that such tumors arise from the sheaths of nerves or from nerve roots. They are more commonly situated centrally, that is, on nerve roots, in contradistinction to the tumors of neurofibromatosis, which are, as a rule, found peripherally. Occurring within the cranial cavity or the spinal canal, they arise most commonly from the root of the eighth cranial nerve or from the roots of the spinal nerves, more commonly the posterior roots. They occur rarely on other cranial nerves, especially the optic and trigeminal.

Canadian Medical Association Journal, Montreal

28: 239-356 (March) 1933

- Source of Modern Medicine. A. MacPhail, Montreal.—p. 239.
- *Treatment of External Cancer by Radiotherapy. G. E. Richards, Toronto.—p. 246.
- *Tumors of Extrahepatic Bile Ducts, Exclusive of Ampulla of Vater. C. W. McLaughlin, Jr., Montreal.—p. 255.
- *Pseudomyxoma Peritonei Originating in Mucocoe of Appendix. H. H. Pitts and E. A. Gee, Vancouver, B. C.—p. 266.
- Carcinoma of the Bronchi. J. C. Meakins and J. W. MacLeod, Montreal.—p. 268.
- Average "Dynamic" Blood Pressure, New Criterion of Cardiac Efficiency. R. J. Lajoie, Los Angeles.—p. 276.
- Gastro-Intestinal Symptoms in Hydronephrosis and Renal Calculi. E. Smith, Edmonton, Alta.—p. 281.
- Significance of Backache in Genito-Urinary Disease. M. I. Seng, Montreal.—p. 283.
- Tuberculosis in Children. A. Goldbloom, Montreal.—p. 286.
- Complement Fixation in Gonorrheal Arthritis. F. Green, Montreal.—p. 289.
- Functional Neuroses. A. McCausland, Mimico, Ont.—p. 293.
- Intratracheal Administration of Nitrous Oxide. C. C. Stewart, Montreal.—p. 295.
- *Suggestion for Administration of Iron. G. H. W. Lucas and V. E. Henderson, Toronto.—p. 298.

Treatment of Cancer by Radiotherapy.—Richards points out that, apart from the urgent importance of early diagnosis, there are few things of greater moment to the victim of malignant disease than is the first line of treatment adopted in dealing with his disease. A condition that materially complicates the treatment of epitheliomas is previous unsuccessful treatment. Frequently these lesions have been repeatedly cauterized by chemical, thermal or electrical methods, or they have been unsuccessfully treated by roentgen rays or radium. In any such case the possibility of completely and permanently healing the lesion is definitely diminished and may be completely lost. The question of excision constantly comes up for consideration in connection with any or all of the lesions of external cancer and there are some surgeons who still practice excision and then refer the patient for postoperative irradiation of some sort. The radiologist feels that in the majority of cases the excision is unnecessary and in a considerable number will result in more scarring than would have otherwise been the case. This is especially true about the face, in which it may be difficult or impossible to perform an excision sufficiently wide to be certain of curing the disease without extensive scarring. If under these circumstances an excision is practiced, it is usually too restricted and dependence must necessarily be placed on irradiation to prevent recurrence. In such a case the responsibility for preventing the recurrence is placed entirely on the radiologist, who could, by the same procedure by which he undertakes to prevent the recurrence, have cured the lesion in the first instance.

Tumors of Extrahepatic Bile Ducts.—According to McLaughlin, benign tumors of the extrahepatic bile ducts are uncommon, while malignant tumors occur in a ratio of approxi-

mately 1:4 to gallbladder carcinoma. Gallstones are present in one third of the cases and are probably an important etiologic factor. Men are more frequently affected than women; the ratio is 3:2. The illness usually begins during the fifth or sixth decade with painless progressive jaundice. Early surgical intervention offers the only hope of relief. The surgical treatment of cholelithiasis, with or without symptoms, would seem indicated if the mortality from bile duct and gallbladder carcinoma is to be reduced.

Pseudomyxoma Peritonei of Appendix.—Pitts and Gee report the case of a man, aged approximately 50, in whom a diagnosis was made of colloid carcinoma of the stomach, with extensive metastases, rendering operation inadvisable. The patient was given symptomatic treatment, chiefly for frequent vomiting and gnawing abdominal pain. Enemas occasionally gave some relief. Considerable morphine was finally required. Bronchopneumonia developed and he died two months later. The diagnosis at necropsy was extensive pseudomyxoma peritonei, originating from a mucocoele of the appendix; calculous pyonephrosis (left); bronchopneumonia (right). On microscopic examination of many of the sections, small islands of tall, columnar, mucus-producing epithelium could be found in locations quite remote from the appendix, and this fact would suggest that they are implants of appendiceal mucosa that have retained their secretory function in their new environment. While this process is not histologically malignant, it is certainly so in its manifestations. There appear to be no criteria by which a preoperative diagnosis may be made, and even at laparotomy a diffuse colloid carcinoma of gastric or colonic origin cannot be excluded without a thorough exploration of these sites. When the condition is so advanced, the prognosis would seem to be absolutely unfavorable.

Administration of Iron.—Lucas and Henderson prepared a fairly stable syrup of ferrous chloride in their laboratory and it was administered orally to patients with anemia by Farquharson. The amount given was approximately $1\frac{1}{2}$ grains (0.1 Gm.) daily. The clinical results obtained by Farquharson in a limited number of cases seem to justify the claims made by other investigators. The authors' formula for the syrup is 1.13 Gm. of reduced iron, 20 cc. of dilute hydrochloric acid and enough syrup to make 120 cc. The dosage is 3.5 cc. of the syrup three times daily after meals. The syrup will keep for about a month under ordinary conditions, if protected from direct sunlight. It may become a very pale yellow, but only a trace of ferric iron is present. Each drachm dose contains approximately one-half grain (0.03 Gm.) of iron in the form of ferrous chloride.

Canadian Public Health Journal, Toronto

24: 53-104 (Feb.) 1933

Problem of Diarrhea and Enteritis, Under Two Years of Age. N. E. McKinnon, Toronto.—p. 53.

*Acute Intestinal Intoxication. A. Brown, Toronto.—p. 57.

Medical Certificate of Death. E. S. MacPhail, Ottawa, Ont.—p. 65.

Skin Sensitivity to Elementary Bodies of Vaccinia. J. Craigie and F. O. Wishart, Toronto.—p. 72.

Thomas Sydenham as Epidemiologist. A. Somerville, Toronto.—p. 79.

Sterilization of Eating Utensils. R. St. J. MacDonald and Grace M. Freeborn, Montreal.—p. 83.

Acute Intestinal Intoxication.—Brown states that intestinal intoxication, a disease of the autumn months, is characterized by diarrhea, vomiting and drowsiness. The blood serum in acute intestinal intoxication shows a decrease in bicarbonate, that is, an acidosis. This is due to loss of base through diarrhea and vomiting, and a piling up of acids through failure of excretion. Loss of chlorides through vomiting, and a reduced amount of serum through loss of water, modify the acid base concentration. The routine treatment of acute intestinal intoxication, as carried out in the author's hospital, consists of the direct transfusion of 15 cc. of whole blood per pound of body weight; the parenteral administration of 10 cc. of fluids per pound of body weight, one fourth of the amount being administered in the form of physiologic solution of sodium chloride, and three fourths as a 5 per cent dextrose solution, and sodium citrate, orange juice and dextrose solution, or a 15 per cent dextrose solution by mouth until the toxicity has disappeared, when the solution can be replaced by diluted evaporated milk or protein milk formulas.

Indiana State Medical Assn. Journal, Indianapolis

26: 97-146 (March 1) 1933

Obstetric Mortality. A. M. Mendenhall, Indianapolis.—p. 97.

Points of Contact Between the General Practitioner and the Otolaryngologist. W. S. Tomlin, Indianapolis.—p. 100.

Cutaneous Manifestations of General Diseases. W. W. Duemling, Fort Wayne.—p. 102.

Urinary Antiseptics. A. F. Weyerbacher, Indianapolis.—p. 104.

Some Causes of Blood in Urine. W. P. Morton, Indianapolis.—p. 108.

Urinary Calculi. W. E. Tinney, Indianapolis.—p. 110.

"Three Generations of Imbeciles Are Enough." C. O. McCormick, Indianapolis.—p. 113.

Journal of Clinical Investigation, New York

12: 247-504 (March) 1933

*Lipids of Blood Plasma in Epilepsy: I. Statistic Study of Single Determinations in One Hundred Epileptic and Thirty-Two "Normal" Subjects. I. McQuarrie, Minneapolis; W. R. Bloor, Rochester, N. Y.; H. A. Patterson, New York, and Clara Husted.—p. 247.

Id.: II. Variations of Lipids in Relation to Occurrence of Seizures. I. McQuarrie, Minneapolis; W. R. Bloor, Rochester, N. Y., and Clara Husted.—p. 255.

Streptococci Agglutinins in Patients with Rheumatoid (Atrophic) Arthritis and Acute Rheumatic Fever. C. S. Keefer, W. K. Myers and T. W. Oppel, Boston.—p. 267.

Skin Reactions to Nucleoprotein of Streptococcus Scarlatinae in Patients with Rheumatoid Arthritis and Rheumatic Fever. W. K. Myers, C. S. Keefer and T. W. Oppel, Boston.—p. 279.

*Sedimentation Rate of Red Blood Cells in Various Types of Arthritis. T. W. Oppel, W. K. Myers and C. S. Keefer, Boston.—p. 291.

Diabetic Acidosis: Detailed Study of Electrolyte Balances Following Withdrawal and Reestablishment of Insulin Therapy. Dana W. Aitchley, R. F. Loeb, D. W. Richards, Jr., Ethel M. Benedict and Mary E. Driscoll, New York.—p. 297.

Calorigenic Action of Thyroxine Polypeptide. W. T. Salter, J. Lerman and J. H. Means, Boston.—p. 327.

Hyperventilation in Arterial Hypertension. S. H. Proger and D. Ayman, Boston.—p. 335.

*Anemia of Infancy from Maternal Iron Deficiency in Pregnancy. M. B. Strauss, Boston.—p. 345.

Serum Proteins in Diabetic Acidosis. J. P. Peters, D. M. Kydd and Anna J. Eisenman, New Haven, Conn.—p. 355.

Nature of Diabetic Acidosis. J. P. Peters, D. M. Kydd, Anna J. Eisenman and Pauline M. Hald, New Haven, Conn.—p. 377.

Experimental Pneumococcus Lobar Pneumonia in Dog: I. Method of Production and Course of Disease. E. E. Terrell, O. H. Robertson and L. T. Coggeshall, Chicago.—p. 393.

Id.: II. Pathology. O. H. Robertson, L. T. Coggeshall and E. E. Terrell, Chicago.—p. 433.

Id.: III. Pathogenesis. O. H. Robertson, L. T. Coggeshall and E. E. Terrell, Chicago.—p. 467.

Plasma Protein and Plasma Colloid Osmotic Pressure in Pathologic Conditions, with Especial Reference to Occurrence of Edema. E. Muntwyler, C. T. Way, Dorothy Binns and V. C. Myers, Cleveland.—p. 493.

Lipids of Blood Plasma in Epilepsy.—McQuarrie and his associates determined the lecithin, cholesterol and total fatty acid of the blood plasma in a group of 100 epileptic and 32 non-epileptic children under essentially the same conditions. No significant difference was found in the range of values for cholesterol or in its variability in the two groups. The mean value for lecithin was found to be significantly lower and that for total fatty acid significantly higher in the epileptic patients than in the nonepileptic control subjects. Both the phospholipid and the total fatty acid values showed significantly greater variability in the epileptic than in the nonepileptic children.

Sedimentation Rate of Red Blood Cells in Arthritis.

—In order to determine the value of the sedimentation rate of the red blood corpuscles in the differential diagnosis and prognosis of arthritis, Oppel and his associates studied this reaction in 107 patients with various forms of arthritis. During the same period, 103 patients with miscellaneous diseases were studied as a control group. There were great variations in the various forms of arthritis. The most rapid rates were seen in acute rheumatic fever, rheumatoid and gonococcal arthritis and the febrile diseases. Patients with rheumatoid arthritis showed a more rapid sedimentation rate than the group with degenerative arthritis, but there was no striking difference between the two groups. Of the patients with other forms of arthritis, those with rheumatic fever showed the most rapid rates, but it was impossible to differentiate the cases of rheumatic fever with arthritis from other cases of acute arthritis from an examination of the sedimentation rate. The reason for the great variation in the same disease is probably the changing state of the patient and the stage of the disease when the examination is made. The authors observed that, as patients with acute rheumatic fever improve, the sedimentation rate decreases. This was true also in some cases of rheumatoid arthritis. In the case of rheumatoid arthritis there were variations in the rate in the same patient

but they were less striking, and there was a greater tendency for the rate to remain elevated for longer periods. This is to be expected, as the disease is chronic. In some patients, increases in the rate were observed without any noticeable increase in the severity of the arthritis, and, in other patients, clinical improvement was not followed by a decrease in the sedimentation rate even over a period of several months. The test is of value in following the course of some diseases, such as acute rheumatic fever and rheumatoid (atrophic) arthritis.

Anemia of Infancy.—Strauss made examinations of the blood, within forty-eight hours after birth, of fifteen infants whose mothers exhibited less than 45 per cent hemoglobin at the time of delivery and of twelve infants whose mothers presented more than 70 per cent hemoglobin. The average hemoglobin of the first group of mothers was 36 per cent and of the second group 76 per cent. The anemia of the first group was of the hypochromic type. The author observed that infants born to women suffering from hypochromic anemia exhibit a normal picture at birth but develop moderate to severe degrees of anemia during the first year of life. This form of anemia may be prevented by administering iron to the mothers during pregnancy or may be corrected by administering iron to the anemic infants. It is believed that this form of anemia is due to deficient storage of iron by the fetus dependent on a deficient supply of this element in the mother.

Journal of Lab. and Clinical Medicine, St. Louis

18: 549-656 (March) 1933

*Bacteriologic and Serologic Study of Eighty-Nine Cases of Dysentery in Which *Bacillus Dysenteriae* Flexner and *Bacillus Dysenteriae* Sonne (*Bacillus Dysenteriae* Castellani-Sonne) Were Isolated as Causative Agents. M. H. Soule and Anne M. Heyman, Ann Arbor, Mich.—p. 549.

Studies on Etiology of Poliomyelitis: Isolation and Cultivation of Organism and Transmission of Disease in Monkeys. F. Ebersson, San Francisco, with assistance of W. G. Mossman.—p. 565.

Respiratory Metabolism and Pulmonary Ventilation in Pulmonary Tuberculosis. M. Elizabeth Marsh, Trudeau, N. Y.—p. 599.

Monocytic Leukemia: Report of Two Cases. C. W. Osgood, Milwaukee, and C. E. Lyght, Madison, Wis.—p. 612.

Further Studies on Comparison of Huddleson Slide Test with Macroscopic Tube Test in Undulant Fever. H. Welch and F. L. Mickle, Hartford, Conn.—p. 627.

*Simple Method of Checking Various Concentrations of Solutions of Novocain Hydrochloride. F. W. Co-Tui and A. Benaglia, New York.—p. 636.

Laboratory Inhalation Technic for Comparison of Semivolatile Liquids. D. A. Bryce, Plainfield, N. J.—p. 638.

Note on Sumner Method for Sugar in Urine. J. J. Short, New York.—p. 641.

Adaptation of Leitz Ultrapak for Rapid Tissue Diagnosis. R. P. Custer, Philadelphia.—p. 644.

Bacteriologic and Serologic Study of Dysentery.—Soule and Heyman report a study of eighty-nine cases of an acute epidemic of diarrheal disease. Eighty-four of the patients were under 8 years of age and sixty-four of this group were less than 2 years old. Organisms belonging to the dysentery group were isolated from sixty of these infections. The authors present a detailed study of the morphologic, cultural, fermentative and serologic reactions of the various strains isolated. The cultures on the basis of these reactions are classified into three groups. Type I appears to be identical in its fermentative and serologic reactions with *Bacillus dysenteriae* Flexner. This type was found most frequently during the epidemic, occurring in twenty-six cases, eight of which terminated fatally. Type II corresponds, colony formation excepted, to *B. metadysenteriae* Castellani and is identical with *B. dysenteriae* Sonne. Members of this group were isolated from seventeen cases in which the clinical manifestations were severe but, in contrast to infections with the Flexner type, were not fatal. Type III, based on fermentation reactions, is closely related to *B. morganii*. However, from the observation that this type was present in four of the fatal infections in which the Flexner organism was the causative agent, it is considered that type III is a variant of type I. Considerable experience on the part of the authors with the mucoid variants of the members of the colon-typhoid-dysentery groups of organisms lends further support to this view. The data indicate that there were two definite serologic groups, *B. dysenteriae* Flexner and *B. dysenteriae* Sonne, among the three types isolated and that they were the causative agents of the present epidemic of infantile dysentery. On the basis of priority, the authors suggest that the name *B. dysenteriae*

Castellani-Sonne be given to the members of the type III dysentery organism of Thijotta.

Checking Solutions of Procaine Hydrochloride.—In view of the not infrequent occurrence of cocaine and procaine poisoning from the use of solutions of higher concentrations than intended; Co-Tui and Benaglia present a simple test, which consists in taking 2 cc. of the reagent, adding 5 drops of the indicator, shaking, then adding 1 cc. of the anesthetic solution to be checked, and shaking again. The resulting color change is compared with the standard chart. The average time for performing this test is thirty-five seconds. The color developed in the tube by the addition of 5 drops of the indicator is deep blue. Comparison should be made in reflected artificial light. Any concentration higher than 2 per cent renders the resulting mixture colorless. Intermediate strengths cause the development of intermediate shades. A definite color is produced with 1 drop of the mixed indicator, but because of the fact that the color developed in transmitted light is different from that in reflected light, 5 drops of the indicator are used to intensify the color to such an extent that light transmission through the solution is largely eliminated. The formula for the reagent is 5.3 Gm. of anhydrous sodium carbonate and 1,000 cc. of distilled water. The formula for the indicator consists of 1 Gm. of thymophthalein, 0.05 Gm. of phenolphthalein and enough 70 per cent alcohol to make 100 cc. The color chart can be made by any local artist from the changes observed by making a series of 2.5, 2, 1 and 0.5 per cent concentrations of procaine hydrochloride.

Journal of Pharmacology & Exper. Therap., Baltimore

47: 269-375 (March) 1933

Inhibition of Estrus by Extracts of Anterior Lobe of Pituitary Body. Marie C. D'Amour and H. B. Van Dyke, Chicago.—p. 269.

Notes on Poisonous Secretions of Twelve Species of Toads. K. K. Chen and A. L. Chen, Indianapolis.—p. 281.

Relative Susceptibility of Nebulous Toad (*Bufo Valliceps*) and Leopard Frog (*Rana Pipiens*) to Different Substances. K. K. Chen and A. L. Chen, Indianapolis.—p. 295.

Physiologic Action of Principles Isolated from Secretion of Common American Toad (*Bufo Bufo*). K. K. Chen, H. Jensen and A. L. Chen, Indianapolis.—p. 307.

Effect of Quinine on Parasympathetic and Sympathetic Innervation of Salivary Glands. G. W. Stavsky, Montreal, Canada.—p. 321.

Comparative Physiologic Actions of dl-β-Phenylisopropylamines: I. Pressor Effect and Toxicity. G. A. Alles, Los Angeles and San Francisco.—p. 339.

Action of Pituitary Extract on Blood Pressure of Normal Unanesthetized Animal and Effects of Ephedrine or Adrenaline Thereon. K. I. Melville, Montreal, Canada.—p. 355.

Action on Cardiac Musculature and Vagomimetic Behavior of Adenosine. A. M. Wedd and W. O. Fenn, Rochester, N. Y.—p. 365.

Minnesota Medicine, St. Paul

16: 147-218 (March) 1933

Cost of Medical Care: Why Was the Survey Made? What Results Were Expected from the Survey? F. S. Chapin, Minneapolis.—p. 147.

Majority and Minority Reports of the Committee on the Costs of Medical Care. C. E. Rudolph, Minneapolis.—p. 152.

Minority Report of the Committee on the Costs of Medical Care. O. West, Chicago.—p. 156.

Some Principles Involved in Health Insurance. M. S. Henderson, Rochester.—p. 161.

What Is Guild Medicine? R. E. Scammon, Minneapolis.—p. 164.

Some Unusually Large Gallbladders: Clinicopathologic Study. E. S. Judd and K. B. Castleton, Rochester.—p. 170.

*Hypoplasia of Aorta as Possible Cause of Cardiac Failure: Report of Cases. K. Ikeda, St. Paul.—p. 172.

Acute Vasospastic Hypertensive Disease with Transition into Malignant Hypertension: Final Report of Case with Necropsy. C. Koenigsberger, Mankato; E. G. Bannick and D. C. Beaver, Rochester.—p. 186.

Spontaneous Pneumothorax: Report of Case. R. V. Williams, Rushford.—p. 192.

Practical Diabetic Diets. A. H. Beard, Minneapolis.—p. 194.

Convulsive States in Adults from Neurologic Standpoint. E. M. Hammes, St. Paul.—p. 199.

Hypoplasia of Aorta.—Ikeda presents four cases of hypoplasia of the aorta terminating in death. In each instance, necropsy disclosed a cardiac hypertrophy with relative dilatation, without any other demonstrable lesions except a small aorta. In none of the four cases were congenital anomalies involving the genital apparatus, heart or any other visceral organs found. The author reviews the literature and formulates diagnostic criteria from several of the authors. Hypoplastic aortas that cause no cardiac symptoms have been encountered from time to time, only to be overlooked or disregarded by the examiner. No plausible explanation has been advanced for the evident

dilemma that, whereas a group of persons showing a hypoplastic aorta manifest definite cardiac symptoms or die of sudden heart failure, many others evidently show no signs of cardiac involvement. The author concludes that in the light of our present knowledge it would seem reasonable to state that there is a sufficient basis for assuming, until otherwise proved, that hypoplasia of the aorta may be a major factor in the causation of cardiac hypertrophy and subsequent sudden failure and death in young, robust persons who show no other demonstrable lesions at necropsy.

Missouri State Medical Assn. Journal, St. Louis

30: 97-138 (March) 1933

- The Heart in Thyroid Disease. A. M. Ginsberg, Kansas City.—p. 97.
Pediatric Surgery. L. B. Clinton, Carthage.—p. 102.
Lymphogranuloma Inguinale (Climatic Bubo): Report of Case. G. Ives and S. D. Katz, St. Louis.—p. 107.
*Surgical Rest and Compression for Pulmonary Tuberculosis: Résumé of the Rationale, Indications and Results. E. C. Padgett, Kansas City.—p. 111.
Tularemia: Report of Three Cases, with Remarkable Recovery of Two. J. R. Nakada, St. Louis.—p. 120.
Tularemia, with Especial Reference to Schilling Differential Blood Counts: Report of Three Cases. R. B. H. Gradwohl, St. Louis.—p. 123.
*Chronic Arthritis of Knee. D. E. Kauffmann, St. Louis.—p. 125.
Economy Table for Application of Plaster-of-Paris Hyperextension Jackets. T. P. Brookes, St. Louis.—p. 127.

Pulmonary Tuberculosis.—Padgett states that the beneficial effects of surgical compression of pulmonary tissue is largely explained on the basis of the physiologic effects of rest and collapse of cavitation. There is some difference of opinion as to the efficiency of hemidiaphragmatic paralysis. The evidence, however, indicates that as an independent procedure phrenicectomy is of value in basal tuberculosis, especially in unilateral tuberculosis of the productive type, and that symptomatic relief may follow in certain selected cases with distressing symptoms caused by the pull of adhesions on vital structures and also in certain cases with hemoptysis. Phrenicectomy is often of value as an accessory procedure to incomplete pneumothorax, when basal or lateral adhesions are preventing collapse, and after a pneumothorax, before the lung is allowed to reexpand, or to prolong the refill interval after pneumothorax. Most observers agree that the operation is indicated preliminary to thoracoplasty. Phrenicectomy in properly selected cases of unilateral tuberculosis of the productive type may benefit as high as 50 per cent, and the operation should fulfil the expectations of the surgeon in about 75 per cent of the times when it is used as an accessory operation. In general, in an otherwise hopeless group of patients, the operation of paravertebral thoracoplasty is of great value in three groups of cases: (1) in pulmonary tuberculosis of the predominantly fibroid type, usually with but also without cavitation, and with the active lesion limited to one lung; (2) following unsatisfactory pneumothorax when an adherent upper lobe prevents apical compression or when a band of adhesions prevents collapse of some essential area, and (3) after a tuberculous empyema of one variety or another has developed which resists conservative treatment (aspiration). The expectation after extrapleural thoracoplasty for pulmonary tuberculosis, provided a proper selection of patients is made, is that about one tenth fail to recover from the operation; about one half become clinically free from symptoms and are restored to work; another third improve, and the remainder die from the progress of the disease.

Chronic Arthritis of Knee.—Kauffmann points out that the treatment of arthritis of the knee is no different from that of arthritis of any other joint. The salicylates are the most important drugs used. Because of the small amount that can be administered by mouth or intravenously, he uses neither of these two methods: he prefers giving the drug by rectum. The advantage is that mammoth doses can be taken without gastric upset. On the first day he gives from 100 to 150 grains (6.5 to 9.7 Gm.) in 4 ounces (120 cc.) of water by rectal drip, followed by an enema during the morning and evening. On the second day he gives two doses of from 150 to 200 grains (9.7 to 13 Gm.). On the following days he gives from 200 to 250 grains (13 to 16.2 Gm.) twice daily in 6 ounces (180 cc.) of water. The amount of the drug will depend on the condition of the patient. This form of treatment is especially useful in acute rheumatic fever and when the pain is severe. At the Mayo Clinic the

rectal method is used, the salicylates being injected in a paste. The most important form of hydrotherapy in arthritis of the knee is the contrast baths, for which a pan of hot water and one of ice water and two bath towels constitute the apparatus needed. The hot towel is wrapped around the painful joint for one minute, and then the ice towel is applied for the same length of time. This is continued for twenty minutes and is done twice daily. Two types of vaccines are used in the treatment of arthritis, the specific and the nonspecific. The use of the former presupposes a correct bacteriologic diagnosis. This consists of taking cultures of material from a supposed focus in the patient's whole blood under the supposition that only the pathogenic bacteria will grow, there being enough resistance in the blood to inhibit the growth of the saprophytic organisms. The most successful form of nonspecific vaccine is the typhoid, and the triple typhoid vaccine is most commonly employed. The initial dose is 25,000,000 intravenously. In patients aged more than 50 it is best to begin with the smaller doses, ten or fifteen million. The second injection is twice the size of the first, and to each following one is added the amount of the original dose. One must naturally be guided by the severity of the reaction. The treatments are given twice weekly for six treatments. If there is no rise in temperature following the fourth injection, it is useless to continue. If improvement has been noted at the end of the series, it is best to wait several weeks and start a new series, this time beginning with the amount that will cause a mild reaction. Because of the reactions that follow, these patients should be kept in bed or, better, in the hospital.

New England Journal of Medicine, Boston

208: 469-524 (March 2) 1933

- Closing of Tuberculous Lung Cavities by Intrapleural Pneumolysis. G. L. Stivers, Worcester, Mass.—p. 469.
Lingual Gitter. R. H. Miller, Boston.—p. 480.
Asymptomatic Permanent Collapse of Pulmonary Lobe with Residual Infection. P. B. Davidson and L. M. Freedman, Boston.—p. 485.
*Present Status of Bismarsen in Treatment of Syphilis. H. Beckman, Milwaukee.—p. 487.
Do Official Death Rates for Diabetes, Cancer and the Puerperal State Accurately Reflect Present Conditions? J. R. Miller, Hartford, Conn.—p. 490.
Recent Progress in Physiology. P. G. Stiles, Boston.—p. 492.

208: 525-572 (March 9) 1933

- Meckel's Diverticulum in Children: Second Clinical and Pathologic Study: Report of Thirteen Additional Cases. H. W. Hudson, Jr., Boston.—p. 525.
Lipomas of Uterus: Report of Case. F. B. Lund, Boston.—p. 536.
Heart in Hyperthyroidism. L. M. Hurxthal, Boston.—p. 538.
Hypothyroid Heart Disease. J. H. Means, Boston.—p. 541.
Unusual Type of General Reaction Following Treatment for Hay Fever. M. M. Restall, Marblehead, Mass., and W. S. Burrage, Boston.—p. 543.
Physician's Responsibility in Examination of Contact Cases of Tuberculosis. J. B. Hawes 2d, and M. J. Stone, Boston.—p. 544.

Bismuth Arsphenamine Sulphonate in Treatment of Syphilis.—Beckman states that bismuth arsphenamine sulphonate is slower than the older drugs in causing the disappearance of spirochetes from primary lesions and also in bringing about the healing of both primary and secondary lesions. It is, however, apparently effective in "curing" seronegative primary syphilis and compares favorably with the older drugs in reducing seropositive primary cases to negative. Bismuth arsphenamine sulphonate has not definitely established itself as equal to the older drugs in preventing relapse in seropositive primary and secondary cases. The healing of the lesions of tertiary syphilis is accomplished more slowly by bismuth arsphenamine sulphonate than by the older drugs, but it provides a good means of testing the arsenic sensitiveness of patients who have had much previous treatment. The efficacy of the drug in reversing the blood Wassermann reaction in chronic syphilis is not yet definitely determined, but it has undoubtedly an excellent tonic effect in these cases. The pain in tabes dorsalis, and particularly the headache in acute meningeal syphilis, is often considerably relieved by the drug. Cases of congenital syphilis with active lesions respond more slowly to bismuth arsphenamine sulphonate than to the older drugs, which is also true of cases of interstitial keratitis. The ultimate effects, however, and also the serum reversal effect, are satisfactory. Local reactions of pain and stiffness follow about 2 per cent of the early injections during a course of treatment. Bismuth arsphenamine sulphonate has apparently a lower systemic toxicity than arsphenamine, perhaps even than neoarsphenamine,

and has been on the whole satisfactorily substituted for the older drugs in cases of arsphenamine sensitiveness. However, it is capable of causing grave injury to the hematopoietic system, and it is also probable that it cannot be safely substituted for the older arsphenamines in instances in which their use has given rise to an exfoliative dermatitis. The incidence of exfoliative dermatitis primarily caused by bismuth arsphenamine sulphionate is low.

New York State Journal of Medicine, New York

33: 361-426 (March 15) 1933

- Ocular Findings in Retrobulbar Neuritis. A. J. Bedell, Albany.—p. 361.
Retrobulbar Neuritis: Rhinologic Findings. G. D. Hoople, Syracuse.—p. 365.
Id. A. C. Snell, Rochester.—p. 370.
Clinical Study of BCG Vaccination. Camille Kereszturi, W. H. Park, M. Levine, P. Vogel and Margaret Sackett, New York.—p. 375.
Inhalation Anesthesia. J. H. Evans, Buffalo.—p. 382.
*Experimental Studies on Subarachnoid Anesthesia: Effect of Procaine Hydrochloride on Respiratory Center. F. W. Co-Tui, New York.—p. 391.
*Resuscitation. P. J. Flagg, New York.—p. 395.

Subarachnoid Anesthesia and Procaine Hydrochloride.

—According to the experiments of Co-Tui on dogs, respiratory stoppage due to paralysis of the respiratory center occurs when procaine hydrochloride is introduced into the subarachnoid space in sufficient dosage. This dosage is not a fixed one but varies with different body states. Some narcotics and disease conditions make the center more sensitive to the paralyzing effect of procaine. The statement often made that spinal anesthesia is perfectly safe in bad risks is not confirmed by the author's experimental work. When complete paralysis of both the respiratory and the vasomotor centers occurs, artificial respiration and the intravenous injection of ephedrine are effective as measures of resuscitation. Hospitals in which spinal anesthesia is employed must be prepared to counteract paralysis of the medullary centers; that is, an artificial respiration equipment and measures for sustaining blood pressure must be at hand.

Resuscitation.—Flagg points out that the only method of resuscitation offering hope of recovery, in the case of extreme asphyxia, absent respiration, absent reflexes, complete relaxation and failing circulation, is intratracheal insufflation of oxygen-carbon dioxide, under pressure, because this technic alone fulfils the three urgent and essential requirements for asphyxial relief. Anoxemia is overcome by the highly concentrated oxygen thrown directly into the absorbing area, the respiratory center is stimulated by the specific action of carbon dioxide, and the Herring-Breuer reflex is directly stimulated through the physical distention of the chest by the insufflated gas. In the case of the new-born, an additional vital benefit is conferred by the relief of antenatal atelectasis.

Northwest Medicine, Seattle

32: 87-128 (March) 1933

- *Postoperative Massive Collapse of the Lung: Its Cause, Prevention and Treatment. W. B. Faulkner, Jr., and E. C. Faulkner, San Francisco.—p. 87.
Atelectasis of Lung and Lobar Pneumonia: Their Etiologic Identity. A. H. Ross, Eugene, Ore.—p. 93.
Diagnosis and Treatment of Lobar Pneumonia: Review of Recent Advances. L. G. Woodford, Everett, Wash.—p. 97.
Reticulo-Endothelial System: From the Practitioner's Point of View. O. J. West, Seattle.—p. 101.
*Pruritus Ani: Mobilization of Reticulo-Endothelial Cells as Aid to Cure. S. H. Tashian, Seattle.—p. 106.
Splenomegaly: Clinical Consideration. L. L. Nunn, Vancouver, Wash.—p. 111.
Sickness and Accident Insurance Problem: Suggested by California State Medical Society. M. P. Dorman, Seattle.—p. 116.

Postoperative Massive Collapse of the Lung.—The Faulkners point out that massive collapse of the lung is caused by the presence of excess intrabronchial secretion and exudate. In general surgical conditions this secretion is aspirated during and following the operation, whereas in patients with previous pulmonary disease the pus is present within the tracheobronchial tree before any type of surgery is instituted. Aspirated material may cause bronchial obstruction and atelectasis by acting mechanically as a foreign body or by setting up an infection of the bronchial mucous membrane so that the resultant edema shuts off the air flow. The movement of this secretion within the lung, with changes in the posture of the patient, has been designated as "internal drainage" and accounts for the site of the atelectasis and the migrations, recurrences and response to

treatment. Postoperative massive collapse of the lung may be prevented by adopting measures to lessen the chances of aspiration, plugging of bronchi, obstruction of the air flow and the spread of infection within the lung. To obviate the onset of atelectasis, patients with pulmonary abscesses, bronchiectasis and pulmonary tuberculosis should have bronchoscopy before and after operation, to remove the excess secretion and exudate and to prevent spilling within the tracheobronchial tree. The posture during and following operation should be such as to accomplish the same end. In general surgery the Trendelenburg, head down, position is recommended; atropine is administered preoperatively to lessen the amount of secretion; oral and nasopharyngeal secretions are removed by suction; and the toilet of the mouth is such that the undesirable effect of aspiration will be lessened decidedly. Treatment is based on the removal of collected intratracheal or intrabronchial secretion. This is facilitated by the administration of saturated solution of potassium iodide, and, when the patient cannot expectorate the material by cough and postural exercises, the bronchoscope is to be used.

Pruritus Ani.—Tashian states that, in pruritus ani, at the stage of chronic dermatitis he has been able to mobilize histiocytes and effect a cure, provided the causative factors have been taken care of. Three solutions are effective stimuli in calling forth these defense cells in great numbers. They are sterile broth solution, hemoglobin, and triply distilled water. Whether the chronic productive obstinate dermatitis is due to bacteria or their toxins, to chemical or osmotic changes, or to lowered resistance, "nutrient broth" seems to be the most innocuous and effective mode of treatment. It attracts the histiocytes in the greatest numbers compared to other solutions (nutrient broth: 3 Gm. of meat extract, 10 Gm. of peptone, and 8 Gm. of sodium chloride adjusted to pH 7.2). The pruritic area should be cleansed with ether and alcohol and painted with iodine. The solution is injected with a hypodermic syringe having a fine needle, 1½ inches long, from the periphery toward the orifice of the anus, fanwise, dividing the circle into six quadrants, and 5 cc. of the solution being injected at each site. This is followed with subcutaneous injections of 1 cc. each, centrifugally all round the anal orifice, about 1 inch distant from the center, until all the wrinkles are smoothed out. This should be repeated every three days for four consecutive treatments. Then, after a lapse of two weeks, the same course of treatments should be repeated.

Psychoanalytic Quarterly, New York

2: 1-180 (Jan.) 1933

- Psychoanalysis of Pharmacothymia (Drug Addiction). S. Radó, New York.—p. 1.
The Body as Phallus. B. D. Lewin, New York.—p. 24.
Anxiety Without Affect. G. Zilboorg, New York.—p. 48.
Pregenital Anxiety in Passive Feminine Character. I. Hendrick, Boston.—p. 68.
Outline of Clinical Psychoanalysis. O. Fenichel, Berlin, Germany.—p. 94.
Turning Points in the Analysis of Case of Alcoholism. G. E. Danic's, New York.—p. 123.

Virginia Medical Monthly, Richmond

59: 703-760 (March) 1933

- Prenatal and Postnatal Instruction: Report of Work Being Conducted by the Medical Society of Virginia. M. E. Lapham, University.—p. 703.
*Penetrating Wounds of Thorax. I. A. Bigger, Richmond.—p. 705.
*Comparative Study of Prostatectomy and Transurethral Resection of Prostate. A. I. Dodson, Richmond.—p. 709.
Detachment of Retina. G. V. Simpson, Washington, D. C.—p. 714.
Pott's Fracture. M. H. Todd, Norfolk.—p. 718.
Cancer. C. W. Putney, Staunton.—p. 723.
Treatment of Toxic Goiter. C. Williams, Richmond.—p. 728.
Diagnosis and Treatment of Diseases of Rectum and Sigmoid. R. S. Anderson, Statesville, N. C.—p. 734.
Mouse Fetus. F. W. Shaw and F. J. Wampler, Richmond.—p. 742.
*Insulin Neuritis: Case Report. C. M. Caravati, Richmond.—p. 745.
Convulsions Due to Renal Retention Toxemia: Case Report. A. H. Moore, Doylestown, Pa.—p. 746.

Penetrating Wounds of Thorax.—Bigger states that penetrating wounds of the thorax are necessarily serious because of the important structures which are apt to be injured. A large percentage of patients with such wounds will recover if treated conservatively, but some will require operation, that is, those with wounds of the heart and great vessels, wounds of the vessels of the chest wall, sucking wounds, and those with

valvular pneumothorax. Any patient who has sustained a penetrating wound in the cardiac area with evidence of beginning circulatory failure should be studied carefully and, if the symptoms and signs of cardiac injury are present, should be operated on immediately. Injury to the vessels of the chest wall is difficult to diagnose, but if there is evidence of continued intrapleural hemorrhage, thoracotomy should be done and the hemorrhage controlled. Sucking wounds should be closed as soon as possible. If there is a closed pneumothorax with marked mediastinal displacement and respiratory embarrassment, aspiration of air should be done; and if this reaccumulates rapidly, continuous decompression by an intercostal tube is indicated. Patients with blood in the pleural cavity should be treated conservatively in the early stages, unless the hemorrhage is so massive as to cause respiratory embarrassment, in which event the blood should be aspirated and partially replaced by air. In the author's series of forty-nine cases of penetrating wounds of the thorax, eight were wounds of the pericardium and intrapericardial structures. Six of the patients were operated on and four of the six recovered. Two were treated conservatively, with one recovery and one death. Thirty-four patients had intrapleural hemorrhage but only ten of these required aspiration. Three patients with large sucking wounds of the chest wall were operated on and all recovered. Of six patients with injuries to the larger vessels of the chest wall, five were operated on and the vessels ligated, and all recovered. In one patient with an injury to a posterior intercostal artery, ligation was not done and death resulted. Of five patients with wounds of the diaphragm, only one required suture. There were three infections of the chest wall; empyema developed in two of these and a lung abscess in one, as a result of the retention of an organic foreign body in the lung.

Prostatectomy and Transurethral Resection of Prostate.—Dodson presents a report based on the treatment of thirty-five patients, fourteen of whom were treated by open prostatectomy. One died in preparation for operation. Twenty were treated by transurethral resection. There were no deaths in the patients operated on by prostatectomy and the final results were satisfactory. There were two deaths in the group treated by transurethral resection. One of these, a patient with advanced carcinoma, died apparently from an unrelated cause. The other, a poor risk, died about a month after transurethral resection from cardiac failure. The average hospitalization for patients treated by open prostatectomy was fifty-four days, while the average hospitalization for patients treated by transurethral resection was thirty-five days, the majority of this saving of hospital days being due to the shortened postoperative period. Patients submitted to transurethral resection were in a better condition when discharged from the hospital than those treated by open prostatectomy. They were more robust and, as a rule, had better bladder function. The author believes that if routine open prostatectomy had been done on all these patients a higher mortality would have resulted.

Insulin Neuritis.—By "insulin neuritis," Caravati refers to subjective symptoms usually in the lower extremities, such as pains, numbness, tingling and thermal changes, which the patient complains of at a rather short interval after the beginning of daily injections of insulin. At times, though rarely, these discomforts are marked and continue as long as insulin is administered. When insulin is discontinued, the paresthesias usually disappear in three or four days, only to be manifest again after the resumption of insulin therapy. The author reports a case of insulin neuritis that was relieved by a change of the brand of the product. The author feels justified in concluding that idiosyncrasy to certain forms of insulin is responsible for the symptoms.

West Virginia Medical Journal, Charleston

29: 97-144 (March) 1933

- Practical Value of Special Diagnostic Methods in Study of Digestive Diseases. E. B. Freeman, Baltimore.—p. 97.
Control of Circulatory Failure in Diabetic Coma. W. M. Sheppe, Wheeling.—p. 107.
Practice of Preventive Pediatrics. A. G. Mitchell, Cincinnati.—p. 113.
The Pediatrician and the Private Practice of Public Health. R. H. Paden, Charleston.—p. 120.
Cystitis in Female. B. B. Nicholson, Parkersburg.—p. 127.
Some Phases of Contract Practice: Outline of Some Important Questions Which Deserve Immediate Consideration. R. G. Leland, Chicago.—p. 133.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

6: 65-128 (Feb.) 1933

- Osteoplastic Metastases. P. Cave.—p. 69.
A New and Much More Rapid Intensifying Screen Allowing Great Alterations in Radiographic Technic. L. Levy and D. W. West.—p. 85.
A New Intensifying Screen. N. S. Finzi.—p. 103.

British Medical Journal, London

1: 353-398 (March 4) 1933

- Role of Excretion Urography in Diagnosis of Disease. H. Wade.—p. 353.
*Perurethral Operations on Prostate. K. Walker.—p. 355.
Fractures of Shaft of Femur. W. J. Eastwood.—p. 359.
Note on Proctodinitis. J. S. K. Smith and A. Tom.—p. 362.
Disordered Regulation of Traffic in the Gut. F. C. Eve.—p. 364.

Perurethral Operations on Prostate.—According to Walker, perurethral methods of operation are of three kinds: electrocoagulation alone, electrocoagulation followed by a punch operation, and the removal of tissue by means of the McCarthy electrotome. The chief danger attendant on perurethral resection being sepsis, and sepsis being encouraged by remaining necrotic tissues, the McCarthy electrotome operation is the best. Perurethral resection necessitates the same attention to renal function and the same preliminary treatment as is required for the open operation. The key to success in perurethral surgery is the proper selection of cases. The most suitable for this method of treatment are cases of obstruction in which there is little total increase in the size of the prostate, cases in which for some reason or another enucleation is contraindicated, and some malignant cases of the scirrhous type.

Indian Medical Research Memoirs, Calcutta

No. 27: 1-125 (March) 1933

- Haffkine's Plague Vaccine. J. Taylor.—p. 1.

Lancet, London

1: 455-508 (March 4) 1933

- Thoracic Surgery. H. M. Davies.—p. 455.
Some Anatomic Points in the Operation for Undescended Testis. D. Browne.—p. 460.
*Glucose-Insulin Administration in Prolonged Narcosis. J. H. Quastel and R. Ström-Olsen.—p. 464.
Some Recent Observations on Filarial Periodicity. G. C. Low and P. H. Manson-Bahr, with a clinical and laboratory report by A. H. Walters.—p. 466.
Types of Pneumococci in Postinfluenzal Pneumonia. I. M. Christie.—p. 469.

Dextrose-Insulin Administration in Prolonged Narcosis.—Quastel and Ström-Olsen point out that the development of narcotic treatment in certain types of mental disease has been greatly retarded by the knowledge that prolonged narcosis for therapeutic purposes is often accompanied by toxic symptoms. They treated about fifty such cases with an alcohol-glycerin-aqueous solution of a mixture of diethylamine salts, 10 per cent barbitol and 10 per cent allylisopropylbarbituric acid, during the past two years. The results were encouraging except that toxic symptoms, including the production of ketosis, were demonstrated in a large proportion of the cases. The toxic by-effects were often so alarming that it became necessary to discontinue the treatment. The authors observed, from preliminary experiments, that the simultaneous administration of dextrose and insulin to narcotized animals brought about a decrease in toxicity of the narcotic, and this work led them to consider the possibility of the administration of dextrose and insulin to patients undergoing narcotic treatment. They have administered dextrose and insulin to twenty patients. The usual procedure has been to administer 2 cc. of a barbituric acid preparation intramuscularly from two to four times in twenty-four hours, most patients receiving three doses a day. The urine was collected in the morning and afternoon, and the morning specimen was always examined for acetone bodies. The Rothera nitroprusside test was used for the colorimetric demonstration of acetone, and in many cases acetone was estimated quantitatively. As soon as definite ketonuria appeared, the following modified procedure was adopted: Simultaneously with the next intramuscular injection

tion of a barbituric acid preparation, from 5 to 15 units of insulin was given hypodermically, and from then on this dose of insulin was administered two or three times daily (with each subsequent dose of the narcotic). With each insulin injection the patient received by mouth 50 Gm. of dextrose in water or milk. Blood sugar estimations were frequently made as a precautionary measure. The doses of dextrose and insulin cited have been, in the authors' experience, sufficient to avoid hypoglycemia. The immediate result of the insulin-dextrose modification of the narcotic treatment was the entire disappearance of ketonuria within forty-eight hours. The patients showed no ketonuria during the remainder of the course of the narcotic treatment, which lasted from fourteen to sixteen days. Toxic symptoms such as cyanosis, alarming drowsiness and vomiting disappeared partially or completely under the modified treatment.

Medical Journal of Australia, Sydney

1: 267-298 (March 4) 1933

Self-Prevention of Insanity. C. Farran-Ridge.—p. 267.
Some Cerebral Tumors: Experiences at Royal Alexandra Hospital for Children. F. Tidswell.—p. 280.

Practitioner, London

130: 233-403 (March) 1933

Emergency Treatment of Some Prevalent Types of Acute Poisoning. W. Willcox.—p. 236.
Treatment of Acute Cardiac Failure. C. F. Coombs.—p. 245.
Acute Abdomen. W. H. C. Romanis.—p. 261.
Operations in Private Houses. J. H. Watson.—p. 274.
Coma. J. Henderson.—p. 286.
*Convulsions. C. Newman.—p. 299.
*Acute Vomiting and Diarrhea in Children. A. Moncrieff.—p. 307.
Sudden Insanity. E. Miller.—p. 316.
Acute Retention of Urine and Its Treatment. J. J. Abraham.—p. 325.
Treatment of Spinal Injuries. G. Jefferson.—p. 332.
Surgical Emergencies of Kidneys. H. Bailey.—p. 342.
Common Gynecologic Emergencies. W. Shaw.—p. 350.
Acute Laryngeal Obstruction. E. D. D. Davis.—p. 361.
Foreign Body in Food or Air Passage. D. A. Crow.—p. 369.
Injuries of the Eye. H. B. Stallard.—p. 377.
Simple, Precise Technic for Blood Transfusion. H. Dodd.—p. 390.

Convulsions.—Newman believes that convulsions in children are due to congenital syphilis, pyrexia, rickets, meningitis, teething, phimosis, worms, and sometimes tetany. When the child is seen in a fit, three things must be done: The convulsions should be checked if possible; the fit should be prevented from recurring by giving from 5 to 10 grains (0.32 to 0.65 Gm.) of potassium bromide, in plenty of water as soon as the child can swallow, and the cause of the convulsion should be investigated, if it is not already obvious. Convulsions in adults are much more serious than in children and may be divided into two groups: those in which the patient is unconscious and those in which consciousness is retained. Consciousness is retained only in poisoning by strychnine and its allied preparations, in jacksonian epilepsy, in tetanus and in tetany. In strychnine poisoning, treatment consists in stopping the fits by chloroform anesthesia, washing out the stomach with a 1:1,000 solution of potassium permanganate, and leaving 20 grains (1.3 Gm.) of chloral hydrate in the stomach. Jacksonian epilepsy is not an emergency, but attention should be directed to the diagnosis and treatment of an organic lesion in or near the motor cortex. In tetanus the proper treatment is to stop the convulsions by chloroform anesthesia, under which the patient is put to bed and given 20 grains (1.3 Gm.) of chloral hydrate and 40 grains (2.6 Gm.) of potassium bromide by stomach tube (or double doses by rectum). The advantage of the tube is that half a pint of milk, two eggs and one-half ounce of dextrose can be left in the stomach at the same time. Thereafter the fits should be controlled by chloral, using chloroform if necessary, but the risk of toxic jaundice from repeated administration should be remembered. In treating a fit accompanied by coma, as soon as the convulsion ceases and the patient can swallow, a large dose of potassium bromide (one-half drachm [2 Gm.] in half a pint of water) should be given to prevent recurrence. If the fit continues, the patient should be anesthetized with chloroform and given a double dose of bromide by rectum. The emergency is dealt with and further treatment can be applied as indicated by the cause.

Acute Vomiting and Diarrhea in Children.—Moncrieff points out that all instances of acute onset of vomiting and diarrhea in children are cases of acute gastro-enteritis due to

bacterial infection; cases in which the cause is essentially irritation by food; cases of alimentary tract disturbance, in which a prolonged dietetic error is followed by the acute onset of vomiting and diarrhea, and cases of symptomatic diarrhea and vomiting. The basic principles of treatment are founded on the knowledge of the exact etiology of the symptoms in the individual case. The child must be treated as a whole. Too much attention to the character of the stools leads nowhere, and a fatal termination may ensue while the excreta are being subjected to detailed inspection. Skilled nursing is essential. A short period (from twelve to twenty-four hours) of starvation is necessary in every case, however mild, and even if the child is breast fed. Infectious precautions (as in typhoid) should be observed in all doubtful cases, and especially when blood and mucus are present in the stools. In infants, with a profound disturbance of water retention, the preliminary starvation period of from twelve to twenty-four hours must be occupied by the administration of copious quantities of fluid. If vomiting is a marked feature, the fluid should be given cold. The elimination of toxic substances in the intestine should be the next step. The author recommends a dose of castor oil (1 drachm [4 cc.] as a minimum). The lower intestine and stomach should be gently washed out with a weak solution of sodium bicarbonate or with physiologic solution of sodium chloride. Stimulants, such as camphor or epinephrine, are of value in collapse. At the end of the period of starvation, the ideal diet is the use of diluted human milk. When this is not available, a skimmed dried milk with the addition of a preparation of maltose and dextrin is indicated. A half cream dried milk diet forms a useful stepping stone between the skimmed milk regimen and the return to a full cream milk. Ordinary cow's milk is best avoided for some time, and all additions of fat to the diet, such as cream or cod liver oil, must be prohibited. In older children treatment is much simpler, as there is rarely the same gross disturbance of the water metabolism. The starvation period must be similarly observed and the return to food made gradually in the form of dilute milk and arrowroot, or one of the malted foods. Castor oil is useful, especially in the presence of abdominal distention, but its administration should not be permitted unless a diagnosis has been made for certain, and conditions such as appendicitis are excluded. In the dysenteric type, bismuth and opium should be used early to produce constipation.

Quarterly Journal of Medicine, Oxford

1: 471-686 (Oct.) 1932

Osteitis Deformans. T. J. O'Reilly and J. Race.—p. 471.
Effect of Removal of Septic Foci on Course of Nephritis. R. Platt.—p. 499.
*Cutaneous Reactions in Acute Rheumatism. W. R. F. Collis, W. Sheldon and N. G. Hill.—p. 511.
Alkalosis Occurring in Alkaline Treatment of Peptic Ulcers. A. M. Cooke.—p. 527.
Macrocytic Hemolytic Anemia. L. S. P. Davidson.—p. 543.
Permanent Organic Cardiovascular Disease After Thyrotoxicosis. F. Bach and G. Bourne.—p. 579.
*Idiopathic Steatorrhea (Gee's Disease): Nutritional Disturbance Associated with Tetany, Osteomalacia and Anemia. T. I. Bennett, D. Hunter and Janet M. Vaughan.—p. 603.

Cutaneous Reactions in Acute Rheumatism.—Collis and his associates investigated the reactions of rheumatic and non-rheumatic children to the soluble extract of the ground-up bodies of hemolytic streptococci. The results indicate that: 1. Rheumatic children are more sensitive to this extract than are the nonrheumatic. 2. Of the rheumatic children, those with chorea are the most sensitive. 3. Children with active acute rheumatism, and for a period of six months after the acute attack after which their reactivity diminishes, show a high proportion of strongly positive reactions (80 per cent). 4. Children with fulminating carditis lose their skin reactivity during the severe phase of their illness, though they tend to regain it later. Patients with chronic cardiac failure also tend to give much reduced reactions. 5. Age (to that of puberty) is an important factor in determining the probability of positive reactions. 6. Skin reactions to hemolytic streptococcus extract appear to bear no relation to skin reactions with hemolytic streptococcus exotoxin (Dick toxin). The authors' comparative study of the skin reactions of extracts of hemolytic, green and non-methemoglobin forming streptococci indicates that these extracts do not contain a common active principle but that each extract

gives a specific skin reaction. Rheumatic children, when tested with extracts of two viridans streptococci and one gamma streptococcus, showed a higher percentage of strongly positive reactions to one of the viridans extracts than did the controls. Skin reactions of rheumatic children to tuberculin, Schick toxin and extracts from pneumococci, staphylococci, diphtheroid bacilli and Pfeiffer's bacillus do not show a higher sensitivity than do nonrheumatic children and thereby differ from the skin reactions produced by hemolytic streptococcus extract.

Idiopathic Steatorrhea.—Bennett and his associates observed fifteen adult patients suffering from celiac disease or idiopathic steatorrhea. They presented the following features: fatty stools, dilatation of the colon, tetany, osteomalacia, anemia, skin lesions and infantilism. Steatorrhea and disturbances of calcium metabolism were alone common to the whole group. Changes in the skeleton were found in all cases investigated. Roentgenograms showed osteoporosis and often florid rickets. In three cases, histologic examination of portions of bone showed osteoporosis and osteomalacia. Glossitis occurred in five cases, and achlorhydria in two of the twelve examined. Six of eight patients showed dilatation of the colon, and in two this assumed the proportions of megacolon. Diarrhea was present in five cases and had occurred in the past in twelve. Tetany was present in fourteen cases, skin lesions in seven, and clubbing of the fingers in nine. Slit lamp examination of the lens of thirteen patients revealed opacities in six: in no instance did the opacity interfere with vision. The blood picture was normal or showed hypochromic anemia, hyperchromic megalocytic anemia, or erythroblastic anemia. No relation between the type and severity of the anemia and other symptoms was established. The hyperchromic megalocytic anemia responded to an autolyzed yeast preparation. The hypochromic and erythroblastic anemias both responded to large doses of iron. Many aspects of metabolism were found to be abnormal. The blood sugar curves after dextrose were much flatter than normal. Similarly the blood urea was often below normal. In thirteen of the fifteen patients the serum calcium was low, and the plasma phosphorus was low or normal in ten and above the limits of normal in the remaining five. The height of the plasma phosphatase coincided approximately with the degree of active changes in the bones. Calcium balance estimations showed high figures for fecal output and low figures for urinary output. The authors suggest that this clinical picture is dependent on a disturbance of gastro-intestinal function resulting in deficient production, absorption or utilization of one or more essential factors.

Japanese Journal of Obstetrics and Gynecology, Kyoto

19: 1-82 (Feb.) 1933

- Investigation of Ferments in Human Colostrum: Part II. Supplemental Study of Oxydoreducase, Catalase. Y. Katsu.—p. 2.
Id.: Part III. Supplemental Study of Carbohydrase, Diastase and Saccharase. Y. Katsu.—p. 10.
Id.: Part IV. Supplemental Study of Esterase, Monobutyrase, Tributyrase, Castor Oil Decomposing Ferments and Olive Oil Decomposing Ferments. Y. Katsu.—p. 21.
Experimental Investigation of Hepatic Function in Pregnancy: Part III. Autolysis of Liver. T. Yokota.—p. 45.
Id.: Part IV. Erypsin of Liver. T. Yokota.—p. 57.
Id.: Part V. Influences of Ovarian Hormone, Anterior Pituitary Lobe Hormone, Placental Extract, Urine of Pregnant Woman, and Vegetative Nerve on Hepatic Autolysis. T. Yokota.—p. 64.
Renal Autolysis in Pregnancy. T. Yokota.—p. 74.

Journal of Oriental Medicine, South Manchuria

18: 13-22 (Feb.) 1933

- Experimental Studies of Postdiphtheric Paralysis: II. Observation of Galvanic Electrical Excitability of Peripheral Nerves and Cerebrospinal Fluid. T. Maki.—p. 13.
Id.: III. Histopathologic Examination of Influence of Diphtheric Bacilli, Their Toxin and Diphtheroid Bacilli on Central Nervous System. T. Maki.—p. 16.
Dysenteric Venation and Adrenalin Secretion. N. Hoshi.—p. 17.
Acute Case of Glanders in Man. T. Matsui and K. Kawamura.—p. 18.
Plague Epidemic of 1931 in Shansi and Shensi Provinces (China). T. H. Lu.—p. 19.
Studies on Zondek-Aschheim's Pregnancy Reaction: IV. Original Producer of Pregnancy Reaction: Substance X. S. Kuga.—p. 20.
Influence of Corpus Luteum on Function of Reticular Endothelial System. S. Kuga.—p. 21.
Blood Groups of Forms of Dental Arch. S. Oshima.—p. 22.

Presse Médicale, Paris

41: 793-816 (May 17) 1933

- *Residual Chromic Index: New Test of Glycolytic Insufficiency. M. Polonovski and H. Waremberg.—p. 793.
Tuberculous Inflammation of Superior Right Lobe of Lung. G. Poix and H. Denecheau.—p. 796.
Treatment of Typhoid by Neoparsphenamine. H. Wohlers and R. Audéoud.—p. 799.

Test of Glycolytic Insufficiency.—Polonovski and Waremberg's new test of glycolytic insufficiency consists in the indirect determination of the intermediate products of sugar metabolism in the blood plasma. The first step consists in the oxidation of the plasma with a sulphochromic solution and titration of the excess of chromic acid. The blood is drawn into sodium fluoride. The plasma proteins are precipitated with tungstic acid. To 2 cc. of the filtrate is added a known quantity of sulphochromic solution of tenth normal dichromate with 25 per cent of sulphuric acid, and the mixture is kept in a boiling hot water bath for one hour. The excess of dichromate is determined iodometrically by titrating with twentieth normal sodium thiosulphate in the presence of starch. The quantity of tenth normal dichromate necessary for the oxidation of 1 cc. of deproteinized plasma is called the total chromic index. After the chromic index of sugar has been computed from the molecular formula and a quantitative determination of the sugar content of the plasma has been made, the amount of dichromate utilized by the sugar in the plasma can be calculated; this is termed the chromic index of dextrose. The difference between it and the total chromic index constitutes the residual chromic index. In the normal fasting adult the residual chromic index varies between 0.30 and 0.60. As the nonprotein nitrogenous constituents of the plasma account at most for 50 per cent of the normal residual chromic index and the other constituents utilize only a negligible fraction of the dichromate, the residual chromic index represents primarily the intermediate products of sugar metabolism. In a general way, the physiologic variations of the residual chromic index are parallel to glycemia. In all cases in which a disturbance of sugar metabolism exists, whether it concerns diabetes, hepatic insufficiency, obesity, hypertension, exophthalmic goiter, cardiac insufficiency, the active period of infectious diseases, a postoperative syndrome, pregnancy or cancer, an abnormally elevated residual chromic index is found. These facts and the constant correspondence observed between the elevation of the residual chromic index and the increase of an artificially induced hyperglycemia justify the determination of the residual chromic index as a test of glycolytic insufficiency. An elevated residual chromic index is one of the first signs of glycolytic insufficiency. Further, serial determinations of this index may give useful indications for prognosis and therapy. The test is made more sensitive by determination of the index before and three quarters of an hour after ingestion of 100 Gm. of dextrose. Any residual chromic index exceeding 0.60 and any elevation of that index three quarters of an hour after ingestion of 100 Gm. of dextrose shows a disturbance of the sugar metabolism. The only exception to this is found in cases presenting uremic retention of more than 0.8 Gm. in a liter; in such cases the increase of the residual chromic index may be independent of the disturbances of sugar metabolism and does not permit any conclusions on this point.

Revue de Chirurgie, Paris

52: 313-400 (May) 1933.

- Bleeding Breast. S. Tzovaru.—p. 313.
*Treatment of Meniscal Lesions of Knee: Enlarged Incision of Barker Considered as Best Access to Intra-Articular Fibrocartilage. J. Stefanini.—p. 349.
Architecture of Cranium: Its Functional Role and Mode of Resistance. Gallois, Japiot and A. Levy.—p. 371.

Treatment of Lesions of Knee.—Stefanini thinks that the only treatment for traumatic lesions of the semilunar cartilage is total excision of the cartilage concerned and that the only route of access to be taken into consideration is transverse arthrotomy. After describing and critically evaluating several methods that make use of transverse arthrotomy, he describes Bonnet's modification of Barker's method, which he thinks meets all the requirements for a satisfactory intervention. It easily permits total removal of the meniscus without mutilation disproportionate to the lesion to be treated, while it preserves

the integrity of the lateral ligament. The first step consists in locating the interarticular line between the bones, perceptible when the knee is flexed, the lateral condyloid tubercle and the direction of the lateral ligament, the internal noticeably vertical and the external slightly oblique below and behind toward the head of the fibula. An incision is made in the form of a J, starting the lower branch, with its concavity upward, at the level of the lateral ligament and continuing it forward by its vertical branch which rises parallel to the patella, about 0.5 cm. from the lateral margin up to two or three fingerbreadths below the base of the patella. The incision must be made higher to permit inward luxation of the patella to reach the external meniscus than for outward luxation of the patella to reach the internal meniscus. A puncture is made with a bistoury and the articulation and the quadricipital pouch are opened with scissors cutting at one time the synovial membrane, the plicae alares and the fibers of the vastus, and, in the lower part, keeping below the meniscus and following at the level of the interarticular line the arc described by the lower branch of the skin incision. With the leg flexed against the thigh, the patella is dislocated toward the side opposite the incision. When the leg is in maximum flexion the entire intercondylar region is exposed and, with the aid of small movements of torsion and adduction or abduction, the injured cartilage is easily detached from one end to the other. The synovial membrane and the fibromuscular planes may be sutured separately or together. The joint is immobilized with a Boeckel splint for a week until removal of the sutures. Active elevation of the leg in extension is started the day after the intervention to limit the atrophy of the quadriceps. By this modification of Barker's method, total removal of the meniscus can be performed more easily and rapidly than by any other route, the articular stiffness and muscular atrophy are reduced and the risk of future articular weakness is avoided. Absolute restoration of function was obtained in the seven cases in which operation was performed in this way by the author.

Policlinico, Rome

40: 273-344 (May 1) 1933. Medical Section

*Bronze Diabetes: Case. M. Bufano.—p. 273

Study of Renal Function with Rehberg's Method. M. Gavazzoni.—p. 294.

Study of Extramedullary Spinal Tumors. G. Borruso.—p. 306.
Morphology and Physiology of Parietal Lobe of Human Brain. F. Giannuli.—p. 321.

Bronze Diabetes.—Bufano states that bronze diabetes is a partial secondary symptom of the primary disease, hemochromatosis. Nothing is known of its etiology. It may be brought on by imminent malaria, alcoholism and chronic gastrointestinal disturbances. It is found exclusively in men, which, according to the author, suggests the possibility of disturbances of the internal genital function. The anatomopathologic lesions consist of large deposits of hemosiderin in the cellular elements of almost all the organs, with predilection for the liver. According to most authors, the pathogenesis of hemosiderosis consists of an inability of the organs and the cell systems, which normally dispose of the substances derived from the catabolism of hemoglobin, to consume the hemosiderin, which consequently is deposited in the parenchyma of almost all the organs and causes their degeneration. Following the primary lesions, many symptoms occur, depending on the organs involved and how seriously they are involved, among them being pancreatic diabetes, hepatic cirrhosis, hyposuprarenalism, disturbances of the myocardial function, various endocrine syndromes, and cutaneous melanosis of mixed origin (hyposuprarenalism and hemosiderosis). The prognosis is fatal. In cases in which it is not possible to make the diagnosis because of the suspicion that the cutaneous melanosis is not due to hyposuprarenalism only, it is considered best to resort to cutaneous biopsy. The author describes a case with histologic alterations of the liver, pancreas, suprarenals, spleen and skin. Hemochromatosis was established. The presence of a deficiency in the testicular function probably influenced the development of the hemochromatosis. It is still doubtful whether the disease is due to the inability of the organs to consume the derivatives of the hemoglobin and not to a fixation of the hemosiderin in the parenchyma.

Archiv für klinische Chirurgie, Berlin

175: 1-180 (May 4) 1933

Conservative Treatment of Hypertrophied Prostate. K. Boshamer.—p. 1.

*Treatment of Prostatic Hypertrophy. R. Wladika.—p. 17.

Anatomy and Symptomatology of Papillomas of Rectum. H. Junghanns.—p. 45.

Spinal Column Symptoms Due to Distorted Spinal Processes. C. Schleipen.—p. 66.

Pectoral Defect (Absence of Pectoralis Major and Minor Muscles). F. G. van Schrick.—p. 73.

Osteographic Method of Differentiation of Cystic and of Solid Bony Tumors. J. Borak and W. Goldschmidt.—p. 78.

Contribution to Gastric Pathology: "Pyloric Neuritis in Gastric or Duodenal Ulcer." M. C. Boon von Ochssée.—p. 100.

*Acute Dilatation of Stomach: Case. S. von Szacsvey.—p. 109.

Technic of Resection of Deep-Seated Duodenal Ulcers. O. Bstch.—p. 114.

Postoperative Quantitative Changes in Blood Fat Content. F. Prochnow and L. Findeisen.—p. 121.

Surgical Treatment of Foreign Bodies in Digestive Tract. F. Spath.—p. 138.

Fracture of Femoral Diaphysis through Muscular Action: Contribution to Sport Injuries. H. Pirker.—p. 155.

Disturbances of Cardiovascular System Result of Arteriovenous Aneurysm. N. A. Podkaminsky.—p. 169.

Twenty-Five Year Old Bone Transplant. N. Petrow.—p. 176.

Treatment of Prostatic Hypertrophy.—Wladika reports the experiences of the past fourteen years (with the treatment of prostatic hypertrophy) in the clinic of Rubritius in Vienna. Of 448 patients with prostatic hypertrophy, 351 were operated on. The greatest age incidence was in the seventh decade. Of these, 188 patients were treated before admission to the clinic by permanent catheterization, bladder irrigation and self catheterization, presumably because of fear of prostatectomy on the part of the general practitioner. High blood pressure is apparently not caused by the urinary retention because the removal of the condition did not have the effect of lowering it. Cystoscopy was not practiced in the clinic as a routine, because of fear of lighting up an infection and because it is in most instances superfluous. Neurologic examination is capable of excluding spinal cord bladders, while cystography will reveal calculi and, above all, diverticula. Associated calculi were present in 16 per cent of the cases. The author points out the futility of incomplete operation; that is, of the removal of stones while ignoring the existence of prostatic hypertrophy. Recurrence of stones takes place because of continued urinary stasis and infection. Attention is called to frequent development of inguinal hernias, at times bilateral, and to the futility of operating on these before the main cause, the difficulty in micturition, has been removed. The most reliable test of renal function is the water concentration test of Koeany. It takes into account both water excretion and water concentration. Satisfactory function implies the ability to excrete not less than 70 per cent of the imbibed fluid after four hours. They have not had a single instance of postoperative uremia since adhering to this test. The indigo carmine test is easily executed but is not as reliable. Diabetes did not constitute a contraindication to operation. The author considers the suprapubic transvesical enucleation of the prostatic adenoma the operation of choice. Epidural anesthesia proved most satisfactory. Postoperative bleeding was prevented by careful hemostasis accomplished by ligation of blood vessels after the enucleation. Tamponade was seldom resorted to, because of its tendency to cause local necroses and to prolong convalescence. Ligation of vasa deferentia at the time of prostatectomy or of primary cystotomy prevents the complication of postoperative epididymitis.

Acute Dilatation of Stomach.—Von Szacsvey calls attention to the fact that the analysis of the histories of patients suffering from acute dilatation of the stomach of other than postoperative or traumatic type reveals that ingestion of unusually large quantities of raw indigestible vegetables was the cause in every instance. The author argues that overloading the stomach alone is not sufficient, otherwise the condition would be much more common. Other factors, possibly such as cause a disturbance in the innervation of the stomach wall, are required. Analysis of the histories of these patients reveals the existence of an infectious disease, of a toxemia, or of chronic poisoning. In the author's case, the eating of sausage, probably tainted, had first given rise to symptoms of discomfort in the epigastric region. To relieve this discomfort the patient ate a large quantity of kraut. The elaboration of toxic products, the hypersecretion and the formation of gas affected

the innervation of the gastric wall, which in turn gave rise to atony, dilatation and complete paralysis of the stomach. The patient was submitted to a laparotomy because of an erroneous diagnosis of intestinal obstruction. Attention is called to the fact that a plain flat roentgenogram is capable of furnishing sufficient information, which should enable one to avoid this error.

Deutsche medizinische Wochenschrift, Leipzig

59: 715-754 (May 12) 1933

- *Differential Diagnosis of Weil's Disease. Schottmüller.—p. 715.
- Aspects of Postoperative Gastritis. R. Korbach.—p. 717.
- Influence of Atmospheric Conditions on Uterine Contractions, Frequency of Births and Incidence of Eclampsia. F. Jacobs.—p. 720.
- *Paralysis of Extensors in Persons Working with Lead. Teleky.—p. 723.
- New Cases of Pelger's Familial Anomaly of Nuclei of Leukocytes. V. Schilling.—p. 724.
- Attempt to Treat Hypertrophy of Prostate with Male Hormone. D. van Cappellen.—p. 726.
- Acute and Chronic Haff Disease. W. Stoeltzner.—p. 728.
- Continuous Gas Analysis by Means of Apparatus Based on Physical Principles. H. W. Bansi.—p. 729.

Differential Diagnosis of Weil's Disease.—According to Schottmüller it is not entirely correct to consider Weil's disease (infectious jaundice) a rare occurrence, for in addition to the typical cases with their sudden onset with fever, chills, jaundice, hemorrhagic nephritis and pains in the calves of the legs and in the joints there are also atypical forms in which even the most characteristic of the symptoms, jaundice, may be lacking. This explains why some cases are not recognized. Until it was possible to demonstrate the pathogenic organism, *Leptospira icterohaemorrhagiae*, in the blood or the antibodies in the serum, the diagnosis was always difficult and unreliable. The author points out that infectious jaundice is a constitutional disease, because the leptospiras find their way into the blood; but, in view of the fact that a septic focus is not demonstrable, he considers it incorrect to call the disease a septicemia. Nevertheless, there are certain similarities between bacterial sepsis and Weil's disease, because a more or less pronounced jaundice develops in many cases of septic endocarditis, puerperal sepsis and osteomyelitis. The fact that these forms of sepsis occur sporadically is, however, no differentiating factor from the usually endemic Weil's disease, for the latter may also develop sporadically. The bacteriologic tests are sometimes the only means of differentiating between sepsis and Weil's disease. The differential diagnosis is especially difficult in disorders in which the septic focus is in the region of the liver, such as in pyelophlebitis, in cholangitides that develop following achylia gastrica and in typhoidal and paratyphoidal cholangitides. The differentiation nearly always necessitates a serologic or bacteriologic examination. Cases of gas bacillus sepsis, which the author observed as puerperal infections, also frequently exhibit symptoms of Weil's disease. An erroneous diagnosis is especially likely if the abortion has already taken its course and the patient does not reveal it. The presence of hematin in the serum and of the disintegration products of hemoglobin in the urine favors gas bacillus infection, and the bacteriologic examination generally clears the etiology entirely. Gas bacillus infection of the gallbladder is even more difficult to differentiate than are the aforementioned gas bacillus infections. The author cites a case in which the diagnosis was not established until the bacilli were detected in the extirpated gallbladder. Blackwater fever may eventually be confounded with Weil's disease. The condition that is most readily and most frequently confounded with Weil's disease is icterus catarrhalis, but this disorder as well as the form of jaundice developing in the course of scarlet fever can likewise be differentiated by bacteriologic tests. The author considers a blood transfusion of 1 liter from a convalescent donor the only effective treatment for Weil's disease.

Paralysis of Extensors in Lead Workers.—Teleky gives the clinical histories of three patients who, after working with lead, developed paralysis of the extensors of the arms and hands. The exposure to lead poisoning was comparatively slight. This and the fact that the paralysis developed suddenly and disappeared again in a comparatively short time seem to indicate that lead poisoning cannot have been the only pathogenic factor. That the paralysis developed in those muscles which had been greatly exerted seems to indicate that the

paralysis was the result of the concerted action of the exertion and the lead poisoning. Moreover, in two of the patients the involved muscles seemed to be weak, but the author does not deny the possibility that lead may have an elective action on the affected extensor muscles.

Deutsche Zeitschrift für Chirurgie, Berlin

240: 249-394 (May 10) 1933

- Nervous Receptor Areas in Wall of Intrapulmonary Bronchi of Man: Their Clinical Significance, Especially in Production of Shock, in Course of Pulmonary Operations. P. Sunder-Plassmann.—p. 249.
- Mediastinal Flutter and Role of Both Venae Cavae in Circulatory Failure. W. Zahn and F. Eggs.—p. 269.
- *Microbiologic and Clinical Studies of Effects of Serum Therapy in Peritonitis. M. Gundel and F. Süssbrich.—p. 283.
- *Recurrence of Inguinal Hernia. D. Ostfeld.—p. 322.
- Operative Treatment of Syringomyelia. P. Mucenicks.—p. 346.
- Technic of Parathyroidectomy for Osteitis Fibrosa on Basis of New Observations. F. Mandl.—p. 362.
- Blood Fat Determinations in Fractures: Contribution to Question of Fat Embolism. W. Vogel.—p. 376.
- Paraplegia in Lymphogranulomatosis. I. G. Knoeflach.—p. 382.
- Treatment of Vesical Ectopy. J. F. Nubser.—p. 390.

Effects of Serum Therapy in Peritonitis.—Gundel and Süssbrich present the results of their investigations on the efficiency of serum therapy in peritonitis of various types. The predominant form was that resulting from perforation of an inflamed appendix. The serum treatment was controlled by and based on the bacteriologic studies of the pus from the peritoneal cavity. In addition to the polyvalent serums, the authors investigated the effect of various combinations of antitoxic serums in thirty-six patients. An idea as to the greatest antibody content of any given serum was obtained from control bacteriologic studies. The Bacillus coli antitoxic serum proved to be of considerable importance, since their bacteriologic studies demonstrated the prevalence of *B. coli* in peritoneal infections. There remained a considerable proportion of patients in whom the enterococcus of type B and the various related transitional forms of the strepto-enterococcus group, as well as the gas bacilli, played the leading part. The authors point out that the etiologic significance of the latter must not be underestimated because, on the one hand, they were able to obtain the enterococcus in pure culture in several instances and, on the other, they were able to demonstrate the morbid effect of the absorption of gas bacilli. It was found that of the several combinations that of *B. coli* serum with gas bacillus serum and the enterococcus serum was the most effective. They prepared a serum containing approximately 65 per cent of the antitoxic *B. coli* serum, 25 per cent of the enterococcus serum and a potent gas bacillus antitoxin containing 100,000 Behring units in each 40 cc. of serum. In their opinion, a combination of this sort enlarges the scope of usefulness of a serum against peritonitis. Its use is rational not only in postappendicular peritonitis but in other forms as well, particularly in the form following perforation of a gastric ulcer.

Recurrence of Inguinal Hernia.—Ostfeld made a follow-up study of 239 patients operated on for inguinal hernia. The Bassini operation without any modification was employed. The suture material consisted principally of silk. Suppuration occurred in 3 per cent, hematoma in 2.4 per cent, scrotal edema in 0.9 per cent, and postoperative pulmonary complications in 12 per cent of the patients. In a total of 586 patients operated on for inguinal hernia, local anesthesia was used in 445, ether in 115, nitrous oxide gas in 12, tribrom-ethanol in 3, and epidural anesthesia in 1. The incidence of recurrence was 5.4 per cent. If operations by beginners were to be excluded, this figure could be lowered to 1.6 per cent. The following observations were made with regard to the causes of recurrence: Disturbances in the course of convalescence were present in 12.2 per cent of the recurrences. Too early resumption of heavy work was responsible for 15.8 per cent. The wearing of a truss for a long period had an unfavorable influence on the sterile condition of the wound as well as on the question of recurrence. The effect of early getting out of bed was not apparent, as the author did not notice any untoward effect from letting the patients get out of bed on the sixth postoperative day. The number of recurrences in persons doing heavy labor was ten times as great as that in persons doing light labor. The effect on recurrence of a chronic cough, of parturition, of appendectomy and of indulgence in sport was uncertain. To obviate

the bad effects of wearing a truss, the author recommends that all hernia carriers between the ages of 5 and 60 years be operated on, provided some special contraindication is not present. The influence of a hereditary predisposition to hernia on recurrence was unmistakable. It was present in two thirds of the recurrences. He suggests that patients stigmatized by a hereditary tendency to hernia formation abstain from heavy work and physical exercise for longer periods of time than is customary. The author considers the original Bassini still the most useful operation for inguinal hernia.

Monatsschrift für Kinderheilkunde, Berlin

58:1-88 (May 3) 1933

- *Pathology of Nurslings Toxicosis: Acid-Base Equilibrium in Experimental Exsiccosis. J. Csapó and E. Kerpel-Fronius.—p. 1.
- *Pathogenesis of Acetonemic Vomiting. M. Weichsel.—p. 9.
- *Treatment of Epidemic Cerebrospinal Meningitis by Means of Withdrawal of Spinal Fluid and Introduction of Air. M. Nuske.—p. 13.
- Influence of Climate on Raising of Nurslings in Palestine. B. Ostrowski.—p. 22.
- Excitation and Intoxication Experiments on Young Rats. Y. Yamaoka.—p. 35.
- Prognosis of Intestinal Infantile. W. Courtin.—p. 39.
- Enlargement of Thyroid in School Children in Silesia. S. Samelson.—p. 48.
- Clinical Aspects of Still's Disease and of Chronic Arthritis in Infants. H. Ahle.—p. 57.

Experimental Exsiccosis.—Csapó and Kerpel-Fronius produced exsiccosis in young dogs (10 days old) by means of a diet with high protein content and by low water intake. It was found that the freezing point of the blood serum was considerably lowered, which indicates azotemia and an increase in the sodium chloride content. The authors designate this condition of the blood as hypersalemia. The bicarbonate is only slightly reduced; the reduction is a result of an increase in the organic acids. In spite of the great increase in the chlorine, the acidosis is not a chloracidosis, because the increased chlorine content is compensated by an increase in bases. The changes in the blood are the result of a disparity between intake and elimination; they are primarily the result of retention. The water deficiency, the osmotic disturbance and the changes in the ional milieu lead to severe metabolic disturbances, which together cause the breakdown of the organism.

Pathogenesis of Acetonemic Vomiting.—Weichsel shows that the assumption that acetonemic vomiting is a metabolic disturbance was refuted by Salomonsen, who proved that a ketogenic diet does not produce vomiting during the attack-free interval. Others, particularly Heymann, contradict Salomonsen and maintain that acetonemic vomiting is the result of a metabolic disturbance in the intermediate metabolism of the liver in children with a neuropathic constitution. In repeating Heymann's tests during the attack-free intervals on four children who were subject to acetonemic vomiting, the author found that the children always developed ketonuria but never a typical attack of acetonemic vomiting. Accordingly, he agrees with Salomonsen and rejects the metabolic disturbance as the primary causal factor of acetonemic vomiting.

Treatment of Epidemic Cerebrospinal Meningitis.—Of twelve children with epidemic meningitis, Nuske treated five by endolumbar or intramuscular injection of serum, and seven by withdrawing spinal fluid and introducing air. The withdrawal was done generally with the child in the recumbent position and by means of a needle introduced into the lumbar region of the spinal cord. With the aid of a rubber tube connecting needle and syringe, disarrangement was prevented during interruption of the withdrawal, for the 20 cc. syringe had to be taken off and emptied when it was filled, and then the same amount of air was introduced while the child was in the sitting position. If the discharge of fluid was slight, withdrawal was done in the sitting position, and if the discharge remained slight, a suboccipital puncture was made. If the discharge was satisfactory from the beginning, air was not introduced until the pressure became lessened. The air volume was nearly always smaller than the fluid volume. Of the five children who were treated with serum and with symptomatic remedies only two recovered, while of the seven treated by withdrawal of fluid and by air inflation four recovered. The author points out that the three fatalities of the last group are not necessarily due to the failure of the inflation treatment but may perhaps be accounted for by the fact that the treatment

was commenced too late or was not carried out adequately. The success of the treatment in the other four cases is the result of the early beginning and of the daily application of the treatment. In spite of the small number of cases, the author gained the impression that serotherapy of epidemic meningitis is not more effective than fluid withdrawal and inflation and he thinks that its efficacy may even be partly due to the latter. At any rate, he states that withdrawal and inflation deserve a trial, the more so since observations so far have proved them harmless.

Zeitschrift f. Geburtshilfe u. Gynäkologie, Stuttgart

105:161-356 (May 9) 1933

- Significance of Tuberculin Skin Reaction for Problem of Pregnancy and Tuberculosis. F. Schultze-Rhonhof and H. Gumbel.—p. 161.
- Pulmonary Ventilation and Respiration During Pregnancy. A. J. Anthony and R. Hansen.—p. 183.
- *Significance of Highest Number of Uterine Contractions in Determining Necessity of Obstetric Interventions. E. W. Winter.—p. 197.
- Prevention of Castration Changes on Hypophysis and Suprenals in White Rats and in Rabbits. F. Friedl.—p. 227.
- Athletics for Women. F. H. Lorenz.—p. 236.
- *Influence of Training for Teachers of Athletics and of Training for Technical Occupations on Course of Menstruation. Auguste Hoffmann.—p. 245.
- Diagnosis and Prognosis of Septic, Particularly Puerperal, Processes on Basis of Blood Tests According to Kriele. G. Christ.—p. 262.
- Treatment of Puerperal Sepsis with Mixed Streptococcus and Staphylococcus Antitoxin. N. Louros.—p. 284.
- Sepsis and Acid Base Equilibrium. L. Hazay.—p. 288.
- *Operative Treatment of Congenital Umbilical Hernia. F. Ludwig.—p. 308.
- Cyclopia. B. Szendi.—p. 315.

Number of Uterine Contractions and Obstetric Interventions.—In 490 carefully observed deliveries, Winter determined whether Walthard and Frey were correct in their statement that the necessity of an obstetric intervention can be determined on the basis of the number of uterine contractions and he concedes that Frey's observations are generally correct. His estimates of the highest number of uterine contractions for primiparas and multiparas, for women with narrow and normal pelvis and for those with normal and with premature rupture of the bag of waters tally with those of Frey, but he emphasizes that the decision on the advisability of an obstetric intervention should not be based exclusively on the highest number of uterine contractions, because other factors should be considered.

Influence of Athletics on Menstruation.—Hoffmann made her observations on eighty-seven students of a training school for teachers of athletics and on 127 students receiving training as laboratory technicians, photographers or metallographers. In the training school for teachers of athletics, from twelve to eighteen hours was devoted each week to various forms of gymnastics and approximately the same number of hours to attendance at lectures (pedagogy, psychology, anatomy, hygiene and so on). The girls being trained for technical occupations devoted from forty to forty-two hours to theoretical and practical work. Approximately one third of the latter group took some form of gymnastic exercise twice a week or more. The author gives tabular reports of the two groups of students indicating the constitutional types, the age at the time of the menarche, the length of the menstrual cycle, the duration and quantity of the discharge, the complaints and the efficiency during the menstrual period. A comparison of the course of menstruation in the two groups of girls before the beginning of the occupational training indicates that the students of the training school for teachers of athletics were of a better physical type than those being trained for the technical occupations, for only 5.6 per cent of the first group had irregularities in the cycle, whereas in the second group the percentage was 15.7. The percentage of those being entirely free from complaints was even more striking, being 74.7 for the students receiving training as teachers of athletics, while it was only 34.6 for the other students. However, in the course of the occupational training this picture changed. Of the students being trained for technical occupations, only a few developed changes in the menstruation, the irregularities in the cycle predominating (five cases). In four the cyclic irregularities developed in connection with the occupational training and in one following gymnastic activity. Leukorrhea developed in three of the students, in two of them in connection with athletic activities. Special attention

was given to menstrual disturbances of the students who received training as x-ray technicians. Three of these students developed cyclic changes and two others had increased pain; but, since the other menstrual changes were not more frequent in these than in other students, the author does not consider it definitely established that the aforementioned changes were caused by the roentgen rays. Twenty-five of the students of the training school for teachers of athletics developed irregularities of the menstrual cycle. Interruptions up to nine weeks' duration developed particularly during intense athletic training, but these changes were temporary in most instances and the cycle became normal again after the intense training was discontinued, although the irregularities persisted for longer periods in eight students. On the other hand, there were six students in whom the menstrual period became more regular during attendance at the training school. Changes in the duration of the flow were observed in twenty-one students, and the quantity of the discharge changed in nine. Painful menstruation was reported by twenty-eight of the students, but only thirteen of these developed them as the result of the athletic training. On the other hand, there were eight students in whom the pains became lessened as the result of the gymnastic training. Leukorrhea developed in fourteen of the students. In evaluating the various changes, the author points out that they should not all be ascribed to the athletic activities, because environmental influences and changes in the sexual life should also be taken into account.

Operative Treatment of Congenital Umbilical Hernia.—After citing statistical reports that prove the rarity of congenital umbilical hernias (one case in 6,600 births), Ludwig describes three cases observed by him. All three received surgical treatment and two infants recovered. The author considers the conservative treatment of congenital umbilical hernias by means of alcohol compresses advisable only in those cases in which infection and necrosis have already set in and in which peritonitis could no longer be prevented by a surgical intervention. Whenever possible, congenital umbilical hernia should be given surgical treatment, for the earlier the operation is performed, the more favorable the prognosis. It is best to receive the child at birth into a sterile cloth and perform the operation immediately.

Zeitschrift für Tuberkulose, Leipzig

67: 337-416 (May) 1933

*Intrathoracic Malignant Tumors Simulating Tuberculosis. K. Nicol.—p. 337.

*Sensitivity of Skin of Tuberculous Patients to Iodine and Histamine. Editha Lass.—p. 350.

Extraordinary High Position of Diaphragm Following Phrenic Exeresis: Two Cases. A. Kenner, K. Weiss and G. Pesek.—p. 358.

After-Treatment and Economic Rehabilitation of Tuberculous Patients. J. B. McDougall.—p. 363.

Experiments with Löwenstein's Method of Culture of Tubercle Bacilli from Blood and Organs of Tuberculous Animals and Human Beings. H. C. Fetzner and H. Schmitz.—p. 367.

*Can Pneumoperitoneum Be Employed in Collapse Therapy of Bilateral Pulmonary Tuberculosis? L. Vajda.—p. 371.

Malignant Tumors Simulating Tuberculosis.—Nicol shows that the early diagnosis of intrathoracic tumors and their differentiation from tuberculosis is often difficult. The primary tumor, by exerting pressure on the vagus nerve, frequently produces symptoms of irritation, such as a dry cough, manifestations characteristic of chronic relapsing bronchitis and slight hemoptysis. The sedimentation speed of the erythrocytes is often considerably accelerated. Deviation to the left concurring with lymphocytosis favors the diagnosis of tumor rather than of tuberculosis. If the tumor grows, fever may develop and there are pains radiating to the back and the pelvis if the pleura is involved. An increasing dyspnea that cannot be explained by other causes and paroxysmal, pertussis-like attacks of coughing should always direct the attention to the possibility of a tumor; and manifestations of bronchostenosis, atelectasis, dilatations of the cutaneous veins on the diseased side of the thorax and edemas are still more demonstrative in that direction. Laryngeal symptoms deserve especial consideration. Hoarseness is not only an early sign of pulmonary tuberculosis but also an early symptom of tumor and, in case of paralysis of the vocal cords or of the recurrent laryngeal nerve, the possibility of a tumor should be considered. An exudative pleurisy is not necessarily a sure sign of tuberculosis, for a

pleuritic exudate, particularly a hemorrhagic one, quite frequently masks a beginning tumor. The signs of pulmonary tumor detectable by physical methods are generally slight. Larger tumors may produce dullness which, because of the absence of auscultatory manifestations, is referred to as "mute." The endotheliomas of the pleura generally present the aspects of chronic adhesive pleurisy. Roentgenoscopy is the most important method in the detection of intrathoracic tumors. A broadening of the hilus shadow, a wedge-shaped protrusion of the shadow into the pulmonary fields, sharp demarcation of the shadow on the margins of the lobes, widening of the upper mediastinal shadow with arched demarcations that reach into the pulmonary outlines, and the rapid development of the shadows to diffuse forms in frequently repeated roentgenoscopy indicate tumor rather than tuberculosis. Diagnostic pneumothorax is helpful in many instances, particularly in exudative pleurisy after the exudate has been withdrawn. Thoracoscopy frequently aids in the detection of pleural tumors. Differentiation between pulmonary sarcomas and carcinomas is difficult, but primary sarcomas of the lung are much less frequent than carcinomas, and sarcomas grow much more rapidly than carcinomas. The problem whether malignant granuloma is directly related to tuberculosis, that is, whether it is caused by a tuberculous virus, has not been decided as yet. Its differentiation from tuberculosis is difficult, but frequent examination of the sputum with negative outcome, the undulating course of the remittent fever, and the development of glandular metastases will generally lead to a correct diagnosis. The author points out that tumor and tuberculosis may exist simultaneously. In these cases the tuberculosis generally antedates the tumor, but the development of the tumor generally has no effect on the course of the tuberculosis.

Sensitivity of Skin of Tuberculous Patients to Iodine and Histamine.—Intracutaneous tests with iodine and with histamine solutions convinced Lass that patients with tuberculosis are hypersusceptible to these solutions. This hypersusceptibility becomes manifest in a more or less intense reddishness around the wheal and in a retarded resorption of the wheal. In normal persons these manifestations are extremely rare. The severity of the disease frequently runs parallel with an increase in the histamine susceptibility and with a relative decrease in the iodine susceptibility. Early tuberculosis and cases with a favorable prognosis frequently show more intense iodine than histamine reactions. The cause of this parallel behavior of the skin and the pulmonary tissues is unknown, but the author suggests that the connection may be found in the changed reactivity of the sympathetic nervous system. At any rate, the sympathetic status seems to influence the allergic condition. According to Unverricht, patients with a hypersensitive sympathetic nervous system react to tuberculous infection with a more marked inflammatory reaction, and Moro, who coined the term "nervous allergy," maintains that the intensity of the tuberculin reaction is dependent on the reactivity of the sympathetic nervous system. The author thinks that her observations on the reaction of the skin to intracutaneous injections of solutions of iodine and histamine in the various stages and forms of tuberculosis is of interest and, although she does not ascribe a specific character to the reactions, she nevertheless considers them more than mere traumatic cutaneous results.

Pneumoperitoneum for Collapse Therapy of Bilateral Pulmonary Tuberculosis.—Vajda thinks that the improvement of tuberculous processes, frequently observable during pregnancy, is partly the result of the upward movement of the diaphragm produced by pressure from below. He therefore tried to induce this condition artificially by means of pneumoperitoneum. He describes his observations on two patients. The first one was given 1,200 cc. of air and the second one 700 cc. Complications did not develop and the function of the abdominal organs was unimpaired. The diaphragms were forced upward to an extent possible only in an unusually successful phrenic exeresis, and their excursions were considerably limited, which is likewise a desirable component of collapse therapy. The author considers pneumoperitoneum advisable in prolonged pulmonary hemorrhages that cannot be influenced by internal measures and in which, if the process is bilateral, the bleeding side cannot be determined or in which a bilateral pneumo-

thorax is inadvisable on account of adhesions, and also in cases in which other surgical methods are not practical or have little prospect of success.

Finska Läkaresällskapets Handlingar, Helsingfors

75: 211-317 (March) 1933

- Menstrual Cycle in Endometrial Heterotopias. J. J. Chydenius.—p. 211.
 *Blood Picture in Chronic Alcoholism. E. Lindström.—p. 225.
 *Case of Diffuse Tumor Formation in Soft Meningeal Membranes in Case of Cancer of Stomach. R. Gordin.—p. 245.

Blood Picture in Chronic Alcoholism.—The results of Lindström's examinations of the blood in fifty-two cases testify against the assumption that chronic abuse of alcohol plays a part in the origin of polyglobulism.

Diffuse Tumor Formation in Soft Meningeal Membranes in Cancer of Stomach.—In Gordin's case in a man, aged 29, the first diagnosis was toxic polyneuritis with psychic symptoms. As the grave anemia gradually dominated the picture, a primary disease of the blood (atypical pernicious anemia?) seemed probable. The symptoms from the spinal cord, marked subjective disturbance and areflexia, were attributed to secondary degeneration in the spinal cord, and the focal symptoms in the later stage to changes in the blood vessels. Enlargement of the supraclavicular and inguinal glands was the first indication of a malignant neof ormation in the organism. Necropsy revealed a diffuse infiltration of the gastric wall, found to be an aplastic cancer on histologic examination. Infiltration with tumor cells was seen in the lymph glands. The soft membranes of the brain and pia were diffusely infiltrated with tumor cells, which also infiltrated the spinal ganglions. The general fibrous thickening of the soft membranes of the spinal cord was most evident in the cervical region, and the degree of degeneration of the spinal cord most extensive in the lumbar and cervical regions. The author cites from the literature sixteen cases with diffuse infiltration of the soft meninges in connection with cancer of the stomach in which anatomohistologic examinations were made. The metastases in his case are thought to have occurred along the perineural lymph tracts.

Hospitalstidende, Copenhagen

76: 325-368 (March 30) 1933

- *Pellagra. T. E. H. Thaysen.—p. 325.
 Experimental Pellagra and Its Significance in Understanding of Etiology of Disease. S. Clemmensen.—p. 349.
 *Secondary Pellagra. Else and H. P. S. Teglbjærg.—p. 356.
 Enterocystomas: Casuistic Contribution; Review. K. Keitel.—p. 365.

Pellagra.—Thaysen's four cases show the varied picture in pellagra, from dermatitis as the only certain symptom in the first case to practically all the symptoms of a grave pellagra in the third and psychic symptoms dominating and causing death in the fourth. The pellagra was complicating or secondary in all cases, the primary disorder being a psychosis in one case and a gastro-intestinal disturbance in three. While the first two cases agree with Goldberger's theory, in the third the prognosis continued grave for a long time in spite of administration of abundant vitamin B₂, and in the fourth the pellagra occurred in spite of an adequate diet. Referring to the literature, the author discusses the possibility of an endogenous avitaminosis in certain cases. It seems to him probable that a disorder of the gastro-intestinal tract can cause pellagra by hindering resorption or utilization of the B₂ vitamin of the diet, or the increased vitamin requirement of the organism is not met by the amount ingested. As certain diagnosis still depends on the manifestation of dermatitis which usually occurs in the springtime, while the pellagra may set in at any season, the disease may remain unrecognized for several months, with delay in treatment and aggravation of prognosis.

Secondary Pellagra.—During the last six months the Teglbjærgs have found five cases of secondary pellagra in the psychiatric-neurologic "Colony Philadelphia," also three cases in journals of discharged patients. As the diet was not deficient in vitamins, the pellagra is ascribed to simultaneous or earlier intestinal disorders causing deficiency in vitamin resorption. The administration of abundant vitamin B₂ was effective in all cases in which it was used. Secondary pellagra is believed to be relatively frequent among patients who refuse to eat and in long continued gastro-intestinal cases. The neuroses

show a remarkable affinity to the sympathetic and extrapyramidal system, and in the psychoses the depression states predominate.

76: 397-416 (April 13) 1933

- *Thrombo-Angiitis Obliterans (Buerger's Disease) in Enzygotic Twins. E. Meulengracht and E. Ølgaard.—p. 397.
 Ulcus Oesophagi e Digestione (Quincke): (Gastric Pseudoretention, Subcutaneous Emphysema). C'td. S. Hindsc-Nielsen.—p. 401.

Thrombo-Angiitis Obliterans in Enzygotic Twins.—Meulengracht and Ølgaard say that their two cases in twin brothers, compared with observations from the literature, might indicate that genotypical factors are important in the development of Buerger's disease.

76: 417-444 (April 20) 1933

- *Calcium and Phosphorus Metabolism in Patient with Osteomalacia, Vegetarian for Twenty-One Years. P. Schultzer.—p. 417.
 Ulcus Oesophagi e Digestione (Quincke): (Gastric Pseudoretention, Subcutaneous Emphysema). C'td. S. Hindsc-Nielsen.—p. 424.
 Treatment with Sexual Hormones: Review. K. Portman.—p. 441.

Patient with Osteomalacia: Vegetarian for Twenty-One Years.—The patient, aged 55, noticed the first symptoms of osteomalacia fifteen years ago. Treatment with vitamin D and calcium chloride resulted in marked improvement. From the patient's history and the metabolism tests Schultzer concludes that the osteomalacia, if, as probable, due to dietary deficiency, depended on a deficiency in vitamin D.

Ugeskrift for Læger, Copenhagen

95: 513-542 (May 4) 1933

- *Idiosyncrasy to Flour as Cause of Vasomotor Rhinitis and Asthma. K. Baagø.—p. 513.
 *Unusual Occurrence of Familial Goiter. C. Clemmensen and G. E. Schrøder.—p. 520.
 Pericarditis in Sylvest-Bing's Disease. T. Dalsgaard-Nielsen.—p. 522.

Idiosyncrasy to Flour.—Baagø finds among bakers an apparently frequent occupational disease due to inhalation of flour dust. The disturbance may be grave enough to force a change of occupation and is as a rule only unpleasant for the patient and highly unhygienic. Seventeen cases are reported.

Familial Goiter.—Clemmensen and Schrøder report eight cases of thyroid disorder in eight brothers and sisters, the children of apparently healthy parents. The four brothers had large goiters which developed at the ages of from 15 to 18, three with symptoms of pressure and nervous symptoms leading to excision in two. Of the sisters, three had small goiters; the fourth, marked myxedema with dwarfism and imbecility. These cases seem to indicate that heredity can follow hitherto unknown laws or that wholly unknown factors are active.

95: 543-572 (May 11) 1933

- *Spontaneous Hypoglycemia (Disease Opposite of Diabetes). H. C. Gram.—p. 543.
 Gymnastics—Gymnastic Therapy. A. Faber.—p. 547.
 Kinds of War Gases. A. Lademann.—p. 549.
 *Xanthomatosis, Dyspituitarism, Christian's Syndrome. O. K. Svenningsen.—p. 551.
 Investigations on Blood Content of Atoxyl-Resistant Lipases (Pancreatic Lipases) in Normal Pregnant Women. K. Germier.—p. 553.

Spontaneous Hypoglycemia.—Gram says that hypoglycemia may be caused by various changes in endocrine organs other than the islands of Langerhans and may be observed without certain anatomopathologic explanation; spontaneous hypoglycemia occurs in benign and malignant tumors originating from the insular tissue of the pancreas. The symptoms correspond closely to those of insulin intoxication and usually appear periodically, with predilection for the morning and longer intervals between meals. Ingestion of food can often ward off an attack. The blood pressure during the attack is low. Treatment consists of frequent meals with abundant carbohydrates for milder attacks, and infusion of isotonic solution of dextrose, possibly also injection of epinephrine, in graver attacks. In grave cases in which laparotomy fails to reveal a tumor in the pancreas, partial resection of the gland may be attempted, although the optimal fraction is hard to determine.

Xanthomatosis, Dyspituitarism, Christian's Syndrome.—Svenningsen's case of general xanthomatosis in a girl aged 4 has shown progressive development of the different symptoms during the past year. The prognosis in this disease seems to him desolate, the only possible ray of hope lying in roentgen treatment.

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AN APPRAISAL OF ANTIRACHITICS IN TERMS OF RAT AND CLINI- CAL UNITS

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It has become increasingly evident that there are now available a considerable number of valuable, indeed almost specific, agents for the prevention of rickets. This fact needs no additional confirmation except in detail. There are, in all, five reliable and well established antirachitics, each one of which represents a distinct and different pharmacologic point of view. The first to be established was cod liver oil, a natural product; the second to be introduced was direct irradiation of the body by means of ultraviolet energy; the third was irradiated food, particularly milk, activated by exposure to ultraviolet radiations; the fourth, an irradiated basic substance, ergosterol, extracted from yeast; the fifth, representing still another method, was "yeast milk," a biologic product endowed with antirachitic potency as the result of feeding irradiated yeast to the cow. In addition to these five established agents there are numerous others which consist of various modifications or combinations; for example, the addition of a concentrate of cod liver oil to milk, or of viosterol to cod liver oil. Whether one or the other of these several antirachitics should be adopted in the campaign to eradicate rickets from the community will depend not so much on their efficacy in preventing rickets as on their availability, which involves their cost to the consumer, the readiness with which they are accepted by the public, their palatability and other nonmedical considerations.

It is now eight years since it was demonstrated that milk can be rendered highly antirachitic by a short exposure to ultraviolet radiations.¹ The method has been remarkably slow of adoption in this country, owing largely to the necessary delay incidental to evolving a satisfactory technic. For some years a commercial preparation of dry milk has been activated in this way, but this winter for the first time irradiated fluid milk was marketed on a large scale in one of the large cities (Detroit). For the past two winters clinical tests have been carried out in the clinics of the department of health of New York City and it was established unequivocally that irradiated milk is able to

prevent rickets, indeed even in the Negro infant.² In regard to the latest addition to the fold, "yeast milk," clinical experience in New York³ and in Boston⁴ has established the reliability of this interesting method of elaborating a specific food.

Some three years ago it was shown that the assumption that the potency of one antirachitic can be expressed interchangeably in terms of another does not accord with clinical experience.⁵ For example, many more "rat units" of viosterol than of cod liver oil were found necessary to protect or to cure infants. On the basis of standard bio-assays they were by no means interchangeable. In the following year it was shown that a similar inconsistency held true in regard to other antirachitic agents and that irradiated milk required a surprisingly small number of rat units, as few as from 35 to 40 being sufficient to protect infants, as judged by the clinical observations of a large series of cases. Recently, Stokes and his colleagues⁶ have come to a similar conclusion.

These observations as to the lack of conformity in the clinic of various antirachitic agents gain additional support from experiments on rickets in animals. Some years ago it was shown that, in order to protect chickens from leg weakness, it was necessary to give them a far larger number of antirachitic units in the form of irradiated ergosterol than of cod liver oil.⁷ Massengale and Nussmeier⁸ came to the conclusion that 100 or even 200 times as much of the former might be required. Two years ago, in the course of an experiment devised to ascertain whether it was preferable to feed cows irradiated ergosterol or irradiated yeast in order to render their milk highly antirachitic, it was found that three times as many units of the former had to be incorporated in the daily ration in order to produce a milk containing 160 rat units to the quart; 30,000 rat units of irradiated yeast was equivalent to approximately 100,000 units of irradiated ergosterol and 60,000 to 200,000 units.³ These conclusions

2. Supplee, G. C.; Dorcas, M. J., and Hess, A. F.: Irradiated Milk: The Energy Requirements for Antirachitic Activation, *J. Biol. Chem.* **94**: 749 (Jan.) 1932. Hess, A. F., and Lewis, J. M.: Milk Irradiated by the Carbon Arc Lamp, *J. A. M. A.* **99**: 647 (Aug. 20) 1932.

3. Hess, A. F.; Lewis, J. M.; MacLeod, F. L., and Thomas, B. H.: Antirachitic Potency of the Milk of Cows Fed Irradiated Yeast or Ergosterol, *J. A. M. A.* **97**: 370 (Aug. 8) 1931.

4. Wyman, E. T., and Butler, A. M.: Antirachitic Value of Milk from Cows Fed Irradiated Yeast, *Am. J. Dis. Child.* **43**: 1509 (June) 1932.

5. Hess, A. F.; Lewis, J. M., and Rivkin, Helen: Newer Aspects of the Therapeutics of Viosterol (Irradiated Ergosterol), *J. A. M. A.* **94**: 1885 (June 14) 1930.

6. Mitchell, J. M.; Eiman, John; Whipple, D. V., and Stokes, Joseph: Protective Value for Infants of Various Types of Vitamin D Fortified Milks, *Am. J. Pub. Health* **22**: 1220 (Dec.) 1932.

7. Hess, A. F.; Supplee, G. C.; Dow, O. D.; Flanagan, G. E., and Kahlenberg, O. J.: The Action of Irradiated Ergosterol on Rats and Chickens, *Proc. Soc. Exper. Biol. & Med.* **27**: 609-610 (March) 1930.

8. Massengale, O. N., and Nussmeier, Mildred: The Action of Ergosterol in the Chicken, II. The Prevention of Leg Weakness, *J. Biol. Chem.* **87**: 423 (June) 1930.

1. Hess, A. F. and Weinstock, Mildred: A Further Report on Imparting Antirachitic Properties to Inert Substances by Ultraviolet Irradiation, *J. Biol. Chem.* **63**: 297 (March) 1925.

are similar to those of Krauss and his colleagues,⁹ who found that the vitamin D in cod liver oil is more efficacious for calcification of the bones of chicks than that contained in the butter-fat from cows fed irradiated ergosterol.

The problem in regard to the various antirachitics is therefore not so much one of efficacy as of ascertaining the number of units required of each preparation in order to prevent or to cure infantile rickets. This question is fraught necessarily with interesting theoretical and practical implications. In the first place, it implies that the established method of gaging the value and potency of antirachitics is not only unreliable but misleading as well. To state that an antirachitic preparation contains 50 units might indicate, in the one instance, that it possesses adequate antirachitic protective power, or, in the other, that it is wholly inadequate and that the therapeutic dose should be increased many fold. From a laboratory point of view such discrepancies in the clinical value of various antirachitics implied that the regulations for measuring potency would have to be revised and that the newer "international units" could be accepted only with definite reservations. For example, although it would be quite in order to compare a sample of cod liver oil with the "reference" cod liver oil and of viosterol with the standard irradiated ergosterol, it would be highly misleading, from a therapeutic point of view, to compare the number of units of viosterol with that in cod liver oil. In view of the importance and timeliness of this problem it was decided to carry out another clinical investigation, introducing certain modifications.

In the first place, although we are interested in these therapeutic agents mainly from the point of view of the prevention of rickets, it was deemed advisable to carry out a curative rather than a protective clinical assay. Several considerations led us to take this point of view. In the first place it enabled the use of an objective clinical criterion, the roentgenologic picture, rather than a set of subjective criteria. A study based on roentgenologic healing of the epiphyses is necessarily more convincing than one based on mere prevention. This is all the more true of rickets, as there are marked inherent difficulties associated with the interpretation of its subjective signs, for example, of beading of the ribs, which is at times difficult to interpret. Again, craniotabes, the softening of parietal areas of the cranial vault, cannot be regularly prevented by any of the antirachitic agents even when given in the full therapeutic dose. Such has been our experience and, we believe, the experience of other clinicians; it may even diminish simultaneously with the development of roentgenologic lesions or make its appearance while the epiphyses are showing evidences of healing. Nor can one rely on the concentration of the inorganic phosphorus of the blood in judging whether or not the antirachitic agent has conferred protection. As pointed out from time to time, the inorganic phosphorus may remain at the normal level, especially in infants under 3 or 4 months of age, in spite of the fact that rachitic changes become evident in the epiphyses. In order, therefore, to remove uncertainties it was decided to carry out a curative test of a series of antirachitics and to make roentgenologic healing the criterion of potency. This decision was made with the realization that roent-

genologic rickets represents a moderate rather than a mild stage of the disorder.

In regard to irradiated milk, the same procedure was followed both as to potency and as to method of elaboration. It was activated by means of carbon arcs, great care being exercised to provide uniformity in the amount and character of applied energy. The apparatus delivered over 5,000 quarts an hour and the milk was subjected to the rays for a period of sixteen seconds ("flash irradiation"). It was found that milk treated in this manner contained from 50 to 60 rat units per quart and that the unitage was remarkably con-

Healing Brought About by the Minimal Curative Dose of Various Antirachitic Agents

| Case | Age, Mos. | Date Begun | Dose | Roentgenologic Rickets | | | Comment |
|---|-----------|------------|---------|------------------------|--------------------|-----------------------|--------------------------------|
| | | | | No. of Rat Units Given | At Onset | Healing After 4 Weeks | |
| | | | | | | | |
| Irradiated Milk, 56 Rat Units per Liter | | | | | | | |
| D. C. | 9 | 3/ 3 | 24 oz. | 42 | Marked | +++ | Negro |
| A. O. | 4 | 2/12 | 24 oz. | 42 | Slight | ++ | Puerto Rican |
| C. W. | 13 | 2/17 | 24 oz. | 42 | Marked | ++± | Slight healing at onset; Negro |
| J. B. | 17 | 3/17 | 24 oz. | 42 | Marked | ++* | Negro |
| J. B. | 6 | 3/ 3 | 16 oz. | 28 | Marked | ? | Osteoporosis; Negro |
| R. H. | 9 | 2/24 | 16 oz. | 28 | Slight | ++ | Negro |
| P. B. | 9 | 2/24 | 16 oz. | 28 | Moderate | ++± | Osteoporosis |
| W. S. | 4 | 2/27 | 16 oz. | 28 | Slight | ++ | |
| L. S. | 2½ | 2/27 | 16 oz. | 28 | Slight | + | |
| S. N. | 3 | 2/27 | 16 oz. | 28 | Slight | + | |
| "Yeast Milk," 120 Rat Units per Liter | | | | | | | |
| J. M. | 8 | 3/ 1 | 24 oz. | 90 | Moderate | ++± | Slight healing at onset; Negro |
| H. H. | 6 | 2/ 7 | 24 oz. | 90 | Moderate | ++ | Puerto Rican |
| S. G. | 4 | 2/ 7 | 24 oz. | 90 | Slight to moderate | + | Puerto Rican |
| P. T. | 6 | 2/ 1 | 24 oz. | 90 | Slight to moderate | + | Puerto Rican |
| S. S. | 5 | 2/ 1 | 24 oz. | 90 | Moderate | ++± | Puerto Rican |
| "Yeast Milk," 80 Rat Units per Liter | | | | | | | |
| H. H. | 11 | 3/ 2 | 24 oz. | 60 | Moderate | ++ | Negro |
| S. L. | 6 | 2/ 8 | 24 oz. | 60 | Slight to moderate | + | Negro |
| D. L. | 5 | 2/ 1 | 24 oz. | 60 | Slight | ++± | Puerto Rican |
| A. C. | 5 | 2/ 2 | 24 oz. | 60 | Moderate | ++ | Puerto Rican |
| V. G. | 6 | 3/18 | 24 oz. | 60 | Slight | 0 | Healing at 6 weeks |
| Viosterol, 80 Rat Units per Drop | | | | | | | |
| T. G. | 6 | 3/ 3 | 4 drops | 320 | Moderate | ++± | Puerto Rican |
| H. P. | 12 | 3/ 3 | 4 drops | 320 | Slight to moderate | ++ | Negro |
| M. R. | 6 | 3/10 | 4 drops | 320 | Slight | + | |
| H. B. | 6 | 3/ 3 | 4 drops | 320 | Very marked | 0 | Negro; osteoporosis |
| C. R. | 5 | 3/ 3 | 4 drops | 320 | Moderate | ? | Puerto Rican |
| A. S. | 2 | 3/10 | 4 drops | 320 | Slight | ? | Twin |
| A. E. | 2½ | 3/ 2 | 4 drops | 320 | Slight | ? | |
| A. S. | 2½ | 3/ 2 | 4 drops | 320 | Slight | + | |

* Milk given for only twenty-four days.
† 40 drops per cubic centimeter.

stant. In the accompanying table, milk of this kind is rated at 56 units per quart or 42 units for 24 ounces, the amount which was fed daily in most cases to each infant. In some cases it will be noted that only 16 ounces a day was given; in other words, 28 rather than 42 rat units. A change was made in regard to the strength of the yeast milk; in our last investigation this milk contained 160 rat units per quart and was found to confer protection or to bring about healing in every instance. The milk that was used in the present test contained fewer units, as it was felt that 160 units was unnecessarily high. The potency of yeast milk can be regulated to a surprising degree by varying the number of rat units of activated yeast which is fed to the cow. Accordingly, cows were segregated into two groups and irradiated yeast was fed to

9. Krauss, W. E.; Bethke, R. M., and Monroe, C. F.: The Effect of Feeding Irradiated Ergosterol to Cows on the Vitamin D Content of Milk, *J. Nutrition* 5: 467 (Sept.) 1932.

the one in an amount sufficient to yield about 120 rat units per quart and to the other in an amount to yield only 80 rat units per quart. Repeated assays proved that this milk developed approximately the potencies that had been calculated; the more potent milk varied merely from 110 to 120 rat units and the weaker from 75 to 80 units. It was likewise found possible in this test to feed smaller quantities of yeast to the cows, as a preparation of brewers' yeast was available which contained 70 D units per gram instead of only 25 to 30 D units, which was the most potent preparation fed two years ago. Babies were given 24 ounces daily of these two strengths of yeast milk, so that one group received approximately 90 and the other 60 rat units a day. The cod liver oil contained from 37 to 40 rat units per gram, making it a 3 D preparation. On the basis of 4 cc. (3.2 Gm.) to the teaspoonful, the children getting this amount received about 130 rat units daily and those who were given one-half teaspoonful, about 65 rat units. A preparation of viosterol was used having a potency of about 80 rat units to the drop (250 D), calculating 40 drops to a cubic centimeter. Four drops were given daily; in other words, the infants received about 320 rat units daily. All antirachitic agents were assayed not only by the laboratory in which they had been prepared but by one or more other laboratories, in order that there should be no question as to the potency of the product. This procedure was considered especially desirable in view of the fact that the question has been raised not only as to whether biologic tests can be relied on but as to whether preparations that have been used for clinical studies contained a far greater or less number of rat units than was supposed. In our previous experiments, assays were not carried out on the identical preparation that was given the infants. Another improvement or refinement in technic was introduced. In every case the roentgenologic observation as to healing was made after a period of four weeks, so that the therapeutic tests were comparable in this respect. In similar studies the time factor has not been rigidly observed, the infants having been under observation for longer or shorter periods. As we know that when assaying antirachitic agents it is imperative to set a fixed limit to the test period, it was deemed highly desirable to observe a similar procedure in the clinic. Most of the infants attended clinics of the New York department of health and we are indebted to the commissioner for his cooperation in connection with this study. The babies were not only carefully examined in the clinic but followed up by a nurse in the home to make certain that instructions were carried out.

Surveying the results, which are abstracted in the accompanying table, one finds that they conform remarkably well with our clinical experiences of the past few years in which the preventive rather than the curative method was employed. A survey of the column which reproduces the degrees of healing will show that the series fed the larger amount of irradiated milk and the higher potency of yeast milk fall into a group in which the results were outstanding. This irradiated milk contained approximately 56 rat units to the quart or 42 units to the daily quota of 24 ounces, and the yeast milk 120 units to the quart, or 90 to the 24 ounce quota. The "efficacy ratio" of the one milk to the other was almost two to one, the irradiated milk requiring about half as many units to bring about similar degrees of healing. The next best group is composed of irradiated milk given in only 16 ounce

amounts daily, of yeast milk of 80 instead of 120 unit potency. From the standpoint of unitage, the least potent of all was viosterol, which assayed at about 80 rat units per drop and of which 4 drops were given daily. In this series we gave, in terms of rat units, approximately 28 units of irradiated milk, 60 of yeast milk and 320 of viosterol. It is very striking that it was necessary to give such a large number of units of viosterol. The "efficacy ratio" of irradiated milk to viosterol has been found to be close to 15:1, about fifteen times as many units of activated ergosterol being required as of activated milk.

These results must be judged not only by themselves but in the light of similar investigations of the past few years, more particularly those undertaken in 1931 and 1932. During the winter of these years, extensive prophylactic as well as curative clinical tests were carried out with irradiated milk and with yeast milk. After a careful review of these various clinical studies we have come to the conclusion that an irradiated milk which contains approximately 56 units to the quart suffices to protect infants against rickets when from 20 to 24 ounces daily is fed, which indicates that the protective dose is about 35 to 42 rat units. A similar survey of our clinical experiences with yeast milk leads to the conclusion that this type of milk should be elaborated so as to contain 100 or possibly 90 units per quart, so that the infant will receive about 70 rat units a day. Turning to viosterol, our experience was not so satisfactory and we do not feel that we can set down the dosage with the same degree of definition. However, irradiated ergosterol in one strength or another has been given in our institution every winter since it was discovered, so that we have a large number of observations which cover a considerable period. On analyzing all these data and weighing them in conjunction with the present curative test, it would seem that about 600 to 800 rat units of this antirachitic agent should be given in order to afford adequate protection; this means from 8 to 10 drops of a 80 unit preparation (250 D). It will be seen that this dosage conforms with that usually recommended by physicians as well as by pharmacologists. As has been previously emphasized, viosterol given in adequate dosage is the most satisfactory antirachitic for curative purposes.

The study included a clinical appraisal of cod liver oil in $\frac{1}{2}$ teaspoonful (2 cc.) and 1 teaspoonful (4 cc.) amounts. The results were somewhat irregular and unsatisfactory. In regard to this antirachitic it is necessary, therefore, to fortify our observations by previous experiences as well as by the large number of reports in the literature. The preparation of cod liver oil which we assayed clinically this year, when titrated biologically in two laboratories, was found to contain from 37 to 40 rat units per gram. Dr. Nelson¹⁰ of the U. S. Bureau of Chemistry states that he has found a composite of twenty-six samples of medicinal cod liver oil to contain 37 Steenbock units per gram, so that the sample which we used may be regarded as representative. Indeed, judging by a paper of Drummond and Hilditch¹¹ and a more recent report of Coward,¹² from 37 to 40 rat units is representative of medicinal cod liver oil not only in this country but in England as well. In summing up our experience and the experiences of others with an oil of this potency.

10. Nelson: Personal communication to the authors.

11. Drummond, J. C., and Hilditch, T. P.: The Relative Value of Cod Liver Oil from Various Sources, H. M. Stationery Office, 1930.

12. Coward, K. H.: Analyst, June, 1932.

which is almost three times the standard, or about 3 D, it would seem that about 2 teaspoonfuls, or 8 cc., may be set down as the prophylactic dose. Translating cubic centimeters of oil into grams, the requirement becomes 6.4 Gm. daily, or about 250 rat units of cod liver oil. Although this figure is necessarily inexact, it is evident that, from the standpoint of effective unitage, the therapeutic dose of cod liver oil falls between the antirachitic milks and viosterol. This conclusion is in accordance with our previous experiences.

It is true that there is considerable variation in susceptibility to rickets and in individual requirement of the antirachitic factor. Only recently, in an experimental study, the rôle of constitution in the development of this disorder was stressed.¹³ Nevertheless, and in spite of such individual variations, the clinical course of rickets is sufficiently constant to justify the laying down of a definite dosage for the various antirachitic agents.¹⁴

It may be added, without entering minutely into the question, that the relatively high potency of irradiated milk and low potency of viosterol cannot be accounted for by the relative amounts of the antirachitic factor in the blood. When protective doses were given, a definitely larger number of units was found in the blood of the infants that had received viosterol, notwithstanding the fact that the clinical effect was about the same. Evidently the clinical effect does not parallel the antirachitic content of the blood, as tested on rats. Assays of the feces showed that, in general, the absorption of the various antirachitics was relatively the same; when the antirachitic unitage was large, more was recovered from the feces, and when a small number of units was fed, the absolute amount in the feces was small.¹⁵

CONCLUSIONS

A further clinical test was carried out on irradiated milk, "yeast milk," cod liver oil and viosterol, the study being controlled with bio-assays of the various antirachitic preparations. It was found that the antirachitic milks, especially irradiated milk, require a surprisingly small number of rat units (from 35 to 40 daily) to confer protection or effect healing, and that viosterol requires the largest number.

Irradiated milk seems to be the most desirable antirachitic for prevention on a communal scale. Only 20 to 24 ounces daily is needed to assure protection. This therapeutic agent has the advantage of being automatic and inexpensive and of providing calcium and phosphorus as well as the antirachitic factor.

The marked distinction between clinical units and rat units implies that the present method of rating antirachitic agents is misleading. Their respective biologic potencies, as expressed in rat units, are not interchangeable. Each type must be appraised for itself. Its

minimal number of therapeutic units must be ascertained clinically and then expressed in terms of rat units. The wide differences in activity between various antirachitics indicate that a clinical as well as a laboratory pharmacology must be taken into account.

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MIKULICZ'S DISEASE AND DIABETES

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During the past decade, a number of European investigators have been interested in studying the parotid glands. Many clinical observations have been made, and considerable experimental work has been done in an effort to learn the true function and significance of the salivary glands. In spite of the tremendous amount of work that has been done on this problem, the question as to whether or not the salivary glands have an internal secretion has not yet been answered satisfactorily. Considerable clinical and experimental evidence has accrued to indicate that there probably is an indirect if not a direct relationship between the salivary glands and the glands of internal secretion. That the parotid glands have a function in some way analogous or related to that of the pancreas has been suggested by recent clinical observations and experiments. Swelling of the parotid glands, or Mikulicz's disease, has been observed recently in a number of patients with mild diabetes. Recently I have studied four patients who exhibited this combination of symptoms. So far as I know, this clinical picture has not been described in the American literature, so I am reporting the four cases I have studied together with a brief review of related clinical observations and experiments that have been published in Europe. Most of these articles were reviewed by Charvát¹ last year.

Baccarani and Zagari² in 1903 pointed out that in serious chronic ailments, such as pulmonary tuberculosis and cancer, there are sometimes cirrhotic processes in the salivary glands with atrophy, which leads to cachexia, to serious digestive disturbances, even to death. They initiated substitution therapy with favorable results in such cases by injection of extracts from the parotid glands and also by ligation of the salivary ducts.

There have been innumerable clinical observations which would point to some relationship between the parotid and the endocrine glands. In epidemic parotitis, orchitis in men and oophoritis and mastitis in women are rather common complications. It has repeatedly been stressed that these complications of mumps are much more frequent in patients with well developed sexual function and that they rarely occur in young children or in those past the prime of life. There are also recorded cases of parotitis following gynecologic operations. Mohr² reported that in cases of atrophy of the genital glands there is hypertrophy of the parotids. Haemerli² and also Dalche² reported cases of hypertrophy of the parotid gland in women at the time of the menopause and in men with dimin-

13. Hess, A. F., and Blackberg, S. N.: An Experimental Study of "The Constitutional Factor" in the Etiology of Rickets, *Am. J. Physiol.* 102: 8 (Oct.) 1932.

14. In examining infants for rickets, it should be borne in mind that there is not only a rachitic beading but also what may be termed "antirachitic beading." By this is meant an enlargement of the costochondral junctions due to the giving of antirachitic agents for long periods and especially in excessive amounts. Beading of this kind may be mistakenly judged as rachitic in nature and may lead to the inference that the therapy has been ineffective. Associated with "antirachitic beading" one may find hypertrophy of the epiphyses at the wrists, associated with hypercalcification but unaccompanied by any changes in calcium or phosphorus concentration of the blood (Hess, A. F.; Lewis, J. M., and Rivkin, Helen: Clinical Experiences with Irradiated Ergosterol, *J. A. M. A.* 91: 783 [Sept. 15, 1928]). A condition of this kind was emphasized recently by Irish (Irish, H. E.: Skimmed Milk Feeding on Bones of Infants, *Am. J. Dis. Child.* 45: 96 [Jan.] 1933).

15. Hess, A. F.; Weinstock, Mildred, and Gross, Joseph: A Biologic Assay of the Blood and Feces of Infants Receiving Various Antirachitics, *Proc. Soc. Exper. Biol. & Med.*, to be published.

From the Cleveland Clinic.

1. Charvát, Josef: Mikuliczův syndrom u úplavice cukru: Příspěvek k problému vnitřní sekrece slinných žláz, *Časop. lékař. česk.* 71: 133-137 (Jan. 29) 1932.

2. Cited by Charvát.¹

ished sexual function. In 9 per cent of a series of Polish children, Ehrlich² found enlarged parotid glands which he considered due to endocrine disturbances caused by undernutrition. Apert² described a case in which there was enlargement of the parotid glands in conjunction with a hypofunctioning thyroid gland, and Gourdel² has described the same finding in cases of myxedema. Bauer³ recorded enlargement of the parotid gland in cases of goiter and in men who had testicular tumors. In 1927, Römer⁴ described two cases in which there was enlargement of the parotids with disturbance of thyroid function. Loos² has described the case of a woman, aged 53, who had had noninflammatory swelling of the parotid since she was 8 years old, which he felt was due to some disturbance of the endocrine system.

In 1897, Ferrannini⁵ reported a case of salivary diabetes. The patient had an excessive flow of saliva (several liters in twenty-four hours) which contained dextrose. Glycosuria alternated with and replaced the glycosialorrhea. This case suggested a possible reciprocal relationship between the salivary glands and the pancreas, and Ferrannini's assistant, Farroni,⁶ carried out a series of investigations on the function of the salivary glands.

Farroni⁶ showed that extracts of the salivary glands of cattle exerted a glyco-inhibitory action in rabbits, preventing or controlling glycosuria following the administration of epinephrine, phlorhizin and morphine. In vitro, these extracts exhibited a marked glycolytic action on different sugars. On the basis of these observations, Ferrannini postulated an endocrine action of the salivary glands analogous to that of the pancreas. A decade later, Best, Scott and Banting² found much insulin in the salivary glands, which they thought was due to extravasation from the blood stream. Later Poluffo² studied the pH of saliva in normal persons and in diabetic patients and found that there was no essential difference in the two groups, although, after the administration of insulin, the alkalinity of the saliva increased somewhat.

Saliva causes a diastatic breaking down of the carbohydrates and is necessary for proper gastric digestion. If both parotids are removed from an experimental animal, death from cachexia results within a short time. This was first shown by Baccarani and Morano² in 1902. These experiments were confirmed in 1907 by Hemeter,² who went a step further and showed that, if extracts of saliva were injected or parotid glands implanted into the abdominal wall of parotidectomized animals, marasmus disappeared and the animals lived. Pagliani² also prolonged the life of his experimental animals by injections of saliva, and Goljanitsky⁷ saved his by intra-abdominal implantation of salivary glands.

In 1927, Utimura⁸ found that dogs died within three months after extirpation of the parotid glands, but he did not ascribe death to digestive disturbances as previous workers had done. The dogs displayed marked

weakness and anemia. Utimura⁸ found that after parotidectomy the action of the thyroid was increased, the islands of Langerhans were enlarged, and there was an increase in the amount of liver glycogen. When the submaxillary glands were removed, these changes were reversed, and if both the parotids and the submaxillary glands were extirpated there were no changes in the pancreas and liver.

A year later, Bono Simonetta² excised the parotids, the sublinguals and the infra-orbital glands of rabbits, but his animals lived, and hence he questioned the results of earlier extirpation experiments.

Many investigators have ligated one or both parotid ducts in studying the problem of parotid function. Goljanitsky,⁷ Dobrzaniecki and Michalowski,⁹ Mansfeld and Schmidt¹⁰ and Zimmermann¹¹ have published the results of extensive investigations. Goljanitsky⁷ found that, when one parotid was ligated, changes soon occurred in the other gland. He explained this on the basis of Metchnikoff's theory of cytotoxins. He felt that concomitant disorders of the gonads and parotids could also be explained by the fact that they have related cytotoxins. Mansfeld, proceeding on the assumption that the endocrine organs are glands which have lost their secretory ducts, and that hence any gland of external secretion could be converted into one of internal secretion by depriving it of its excretory duct, anticipated that ligation of the ducts of Steno would convert the parotid glands into endocrine glands with an insulin-like secretion. This hypothesis was based on the embryologic and morphologic similarity of the pancreas and the salivary glands and the fact that both are concerned in the digestion of carbohydrates. When he ligated the parotid glands of dogs, he found that the level of the blood sugar was lowered. Later, the ligated glands were extirpated and the level of dextrose returned to normal. In dogs with experimental diabetes produced by partial extirpation of the pancreas, ligation of the parotid ducts controlled the hyperglycemia. However, ligation of the ducts of Steno had no effect in controlling the diabetes produced by total removal of the pancreas. Mansfeld concluded from these experiments that the parotid glands must produce a substance which stimulates the pancreas to increased function. Seelig¹² and also Dobrzaniecki and Michalowski⁹ repeated Mansfeld's experiments and confirmed his observations.

In 1932, Zimmermann¹¹ made similar studies and also made extensive histologic studies of the parotid glands removed at varying intervals after ligation. These showed a gradual dilatation of the ducts with atrophy and fibrosis of the glandular parenchyma. Goljanitsky⁷ also made comparative histologic studies of the pancreas and the parotid. He felt that the star cells resting on the membrana propria of the secretory canal and the so-called Giannuzzi's moon-shaped cells correspond to the islands of Langerhans in the pancreas. When the parotid duct was ligated, he found that the epithelium disappears and the interstitial tissues hypertrophy, thus stimulating the endocrine activity of the gland. He felt that the internal secretion of the salivary gland has a function similar to

3. Bauer, J.: Ueber Parotidisvergrößerung, *Ztschr. f. ang. Anat.* 4: 233, 1919.

4. Römer, C.: Speicheldrüsen und innere Sekretion, *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* 10: 465-280, 1927.

5. Ferrannini, Andrea: A Glycosialorrhea and Glucosialorrhea, *Riforma med.* 44: 1249 (Sept. 24) 1928; *Glycosialorrhea and the Internal Secretion of the Salivary Glands*, *Rev. de méd.*, Paris 31: 269, 1911.

6. Farroni, B.: Funzione endocrina delle glandole salivari ed eliminazione degli zuccheri, *Rev. crit. di clin. med.* 12: 577, 593, 1911.

7. Goljanitsky, J. A.: The Question of Secretion of the Endocrine Glands, *Arch. f. klin. Chir.* 130: 763, 1924.

8. Utimura, S.: Einfluss der Extirpation der Speicheldrüsen auf verschiedene Organe, insbesondere auf die endokrinen Drüsen, *Jap. J. M. Sc. Tr.* VIII, Int. Med., *Pediat. & Psychiat.* 1: 481-488 (Dec.) 1927.

9. Dobrzaniecki, Wladyslaw, and Michalowski, Emil: Influence de la suppression de l'excretion de la parotide sur la glycoregulation, *Lyon chir.* 28: 571-579 (Sept.-Oct.) 1931.

10. Mansfeld, G., and Schmidt, Eugen: Versuche zu einer operativen Behandlung des Diabetes, *Klin. Wchnschr.* 7: 1457-1460 (July '29) 1928.

11. Zimmermann, L. M.: Effect of Ligation of Parotid Ducts on Carbohydrate Tolerance of Normal Dog, *Arch. Int. Med.* 49: 409 (March) 1932.

12. Seelig, S.: Ueber Beziehungen zwischen Parotis, Pankreas, Blutzucker und Diabetes mellitus, *Klin. Wchnschr.* 7: 1228-1230 (June 24) 1928.

that of insulin and that both hormones are antagonistic to epinephrine.

As the result of these experimental investigations on animals, numerous attempts have been made to treat diabetic patients by ligation of the parotid ducts. After his early experiments, Goljanitsky⁷ reported beneficial results from ligation of the salivary duct in a patient with diabetic gangrene. In 1929, he¹³ described some cases in which ligation of the parotid ducts and transplantation of the submaxillary gland seemed to ameliorate the symptoms of diabetes. Seelig¹² reported favorable results in seven of ten diabetic patients in whom one parotid duct had been ligated. However, in a later publication, dealing with eighteen cases, he¹⁴ concluded that the results of this operation were negligible.

An interesting clinical study was made by Mironescu, Nicolicesco and Stefanescu-Dima.¹⁵ They determined the blood sugar in fifteen patients with epidemic parotitis and found normal values in nine, a slightly increased level in five, and slight hypoglycemia in one. None of these patients had glycosuria.

It is now forty-five years since von Mikulicz¹⁶ described the disease or syndrome that bears his name. The patient he described was a man, aged 42, who had bilateral chronic painless enlargement of the lacrimal glands and of the salivary glands, which could not be accounted for by any of the clinical observations, and hence the symptoms were ascribed to some obscure infection. The patient died later the same year from perityphlitis, and during his last illness the parotid glands decreased rapidly in size and, at the time of death, appeared almost normal. Since von Mikulicz's description, more than a hundred instances have been reported in the literature, but these are not all regarded as authentic cases. Schaffer and Jacobsen¹⁷ have proposed the following classification of cases of enlargement of the parotid gland:

1. von Mikulicz disease:
 - Familial—rare.
 - von Mikulicz disease proper.
2. von Mikulicz syndrome:
 - Leukemia—frequent.
 - Tuberculosis—rare.
 - Syphilis.
 - Lymphosarcoma—frequent.
 - Toxic agents, lead, iodides, etc.
 - Gout.
 - Febris uveoparotidea subchronica.

Last year, Charvát,¹ in addition to a review of the literature on the parotid glands, reported three cases of mild diabetes in which there was also symmetrical painless noninflammatory swelling of the parotid glands, which had persisted from six months to three years. Lymphatic leukemia, syphilis and tuberculosis were ruled out in each case.

Charvát felt that the parotid swelling represented a compensatory hyperplasia of the glandular parenchyma in response to failing insulogenic function or a symptom of endocrine hyperfunction of the salivary

glands, which might account also for the mildness of the diabetic state. In two of these patients, the parotid swelling decreased with treatment for the diabetes.

Flamm¹⁸ became interested in the study of hypertrophy of the parotid glands as a symptom of diabetes mellitus through observing a woman with hypertension who had frequent attacks of swelling of the salivary glands, which were not accompanied by pain, fever or other signs of inflammation. In the intervals between attacks, the parotid glands remained somewhat larger than normal. Later, diabetes mellitus was discovered with continued recurrence of parotid hypertrophy. This caused a peculiar transformation of the features of the face, which Flamm noticed was quite characteristic of a good many patients with diabetes.

In order to approach the study from a different point of view, Flamm decided not to examine the parotid glands of patients with diabetes but to study patients with abnormally large parotid glands. In a group of twenty-seven patients with swelling of the parotid glands, sixteen showed glycosuria and also an increase in the fasting blood sugar. Dextrose tolerance tests showed some decreased sugar tolerance in the other eleven patients. It also was noted that most of these patients belonged to the constitutional type designated as sthenic hypertension diabetes. Flamm¹⁸ offered no direct explanation of the functional processes underlying this hypertrophy of the parotids in diabetic patients, but concluded that it might be interpreted as a compensatory process.

Recently, I have observed four patients with enlargement of the parotid glands and mild diabetes. None of these patients sought medical advice because of the diabetic condition, although in one case diabetes had been diagnosed previously but the patient had not had adequate or systematic treatment. In each instance the enlargement of the parotid glands was noted in the clinical examination, with subsequent detection of glycosuria and hyperglycemia. In none of these cases could the parotid hypertrophy be attributed to any inflammatory or infectious process.

REPORT OF CASES

CASE 1.—A Syrian woman, aged 50, complained chiefly of chronic cough, dyspnea and pain in the chest. The patient was obese, 44 per cent overweight, and her blood pressure was 130 systolic, 80 diastolic. The most significant observations in the physical examination were bilateral symmetrical swelling of the parotid glands, emphysema and increased bronchial sounds in the left side of the chest. A roentgenogram of the chest showed dilatation of the bronchi and fibrosis of the lungs and cardiac hypertrophy. The diagnosis was chronic bronchitis with bronchiectasis and myocarditis. There was marked glycosuria, although the fasting blood sugar was normal. However, a dextrose tolerance test showed decreased tolerance. The diabetes was satisfactorily controlled on a restricted diet. Several infected teeth were removed, and general physical therapeutic measures, including heat and massage, were instituted. The patient's general condition improved somewhat, but her symptoms were not entirely relieved. There was no change in the parotid swelling.

CASE 2.—An Italian woman, aged 37, who appeared about twenty years older, came to the clinic complaining of severe occipital pain. She was very obese, about 55 per cent overweight, and her blood pressure was 139 systolic, 86 diastolic. Aside from the obesity, the only significant physical condition was bilateral enlargement of the parotid glands. A special neurologic examination did not reveal the cause of the severe headaches. A roentgenogram of the skull showed three decal-

13. Goljanitsky, J. A.: Die innere Sekretion der Speicheldrüsen, *Ergebn. d. ges. Med.* 13: 125-152, 1929.

14. Seelig, S.: Zur chirurgischen Behandlung der Zuckerkrankheit, *Arch. f. klin. Chir.* 157: 322-329, 1929.

15. Mironescu, T.; Nicolicesco, N., and Stefanescu-Dima, Vasile: Troubles régulateurs de la glucose dans la parotidite épidémique, *Bull. Acad. de méd., Paris* 101: 647-651 (May 28) 1929.

16. von Mikulicz, Johann: Ueber eine eingenartige, symmetrische Erkrankung der Thränen- und Mundspeicheldrüsen, *Beitr. z. klin. Chir., Festschrift, Theodor Billroth, Stuttgart*, 1892, pp. 610-630.

17. Schaffer, A. J., and Jacobsen, A. W.: Mikulicz's Syndrome, *Am. J. Dis. Child.* 34: 327 (Sept.) 1927.

18. Flamm, Ernst: Hypertrophy of the Parotid Glands as a Symptom of Diabetes Mellitus, *Klin. Wchnschr.* 11: 1704 (Oct. 8) 1932.

cified areas; one, left frontal; one, right temporal, and a rather irregular area well forward at the vertex. The significance of this finding was not determined in relation to the cephalalgia. The cervical sympathetic nerves were injected in an effort to relieve the pain, but this treatment was only partially successful. The laboratory examinations revealed marked glycosuria and hyperglycemia (fasting blood sugar, 214). A diet containing 1,800 calories and 15 units of insulin three times a day were prescribed. The patient has not returned to the clinic since, and nothing is known of the results of treatment.

CASE 3.—An Italian woman, aged 52, complained that for five years she had not been in good health. Her abdomen had been enlarging steadily; there was burning on urination, and during the last year there had been a coarse tremor of the hands and feet, with some numbness and tingling of the feet. The patient had had seventeen pregnancies, with only four children living and well. A number of pregnancies resulted in abortions or stillbirths, and several children died during the first year of life. The patient was short and obese, and her blood pressure was 150 systolic, 82 diastolic. The parotid glands were symmetrically enlarged. The abdominal wall was relaxed and the abdomen markedly distended. A large mass in the hypochondrium was found to be due to ptosis of the liver. Hemorrhoids had been present for twenty-eight years. A typical pill-rolling position of the hands with a coarse intermittent tremor was noted. The fasting blood sugar was 272 mg. per hundred cubic centimeters, and the blood urea 69 mg. The hemoglobin and red blood cell counts were below normal.

The diagnosis was diabetes, Parkinson's disease, pernicious anemia, Mikulicz's disease, obesity and abdominal viscerotoposis. The diabetes was controlled on a diet of 140 Gm. of carbohydrate, 60 Gm. of protein and 111 Gm. of fat, with 10 units of insulin three times daily, but no change was noted in the size of the parotid glands.

CASE 4.—An Italian woman, aged 68, sought relief from intense itching of the skin, which had begun about a week before and had become progressively worse. Nine months before she had had polyuria and had been told by her family physician that she had diabetes. Her diet had been only slightly restricted and she had received no insulin. The polyuria had disappeared. Her blood sugar was 300 mg. per hundred cubic centimeters and she had severe glycosuria. Aside from moderate obesity, bilateral swelling of the parotid glands was the only significant finding in the physical examination. The skin condition was diagnosed as diabetic dermatitis. On a routine diabetic diet of 1,800 calories and 10 units of insulin twice daily, her blood sugar returned to normal, and she was advised to follow this regimen after she left the hospital. At a subsequent examination, the blood sugar had increased slightly, and the insulin dose was increased to 15 units twice a day, which has controlled the diabetes satisfactorily.

COMMENT

All four of these patients were obese, and there was a striking similarity in their facial appearance. Not one of them has been observed more than a few months, and during that time there has been no diminution in the size of the parotid glands. The diabetes was mild in all these cases and was easily controlled with moderate dietary restrictions and small doses of insulin. Whether the parotid swelling represents a compensatory process brought about by decreased pancreatic function, as Charvát and Flamm have suggested, remains an open question. But these cases are reported with the hope that it may stimulate more clinical observations and more interest in the possible relationship between the salivary glands and the pancreas. At present the problem is largely of academic interest, but further experiments and observation may bring forth knowledge that may be of significant importance clinically.

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VACCINATION AGAINST WHOOPING COUGH

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As vaccination against whooping cough is still much discussed, the following observations might perhaps be of some interest.

The vaccine used in the State Serum Institute in Copenhagen is always made from several recently cultivated strains of Bordet-Gengou bacilli; forty-eight hour blood agar cultures are emulsified in physiologic solution of sodium chloride containing 1 per cent solution of formaldehyde, so that the suspension contains about 10,000 millions of bacilli per cubic centimeter. The vaccine is given in three injections intramuscularly or subcutaneously with intervals of from three to four days: 0.5, 0.7 and 1.0 cc. This dosage is greater than that usually employed.

As generally maintained, one of the advantages of whooping cough vaccination is the absence usually of severe reactions following the injections, although it would seem correct to call attention to two deaths that have occurred in Denmark. In both cases, the children concerned were new-born in families at the time when whooping cough was present. The physician in charge therefore considered it desirable to vaccinate the new-born children. Immediately after birth one child was given 0.1 cc. of whooping cough vaccine, subcutaneously, causing no symptoms, and four days later 0.15 cc. was given. One-half hour after the last injection, contractions in the arms and legs occurred, followed by cyanosis, hiccup, convulsions and death within a few minutes. The other case, occurring two years later, was that of a child weighing 2,250 Gm., born five weeks prematurely. Eight days after birth, 0.1 cc. of whooping cough vaccine was given, causing no symptoms. Three days later, 0.2 cc. was injected (all injections subcutaneously). Two hours after this injection, the child died suddenly with slight cyanosis but no convulsions or vomiting. At the postmortem examination no definite cause of death could be established. No attempts will be made here to explain these two deaths. In spite of the fact that numerous new-born children have been vaccinated without any reactions, we now do not recommend the vaccination of children under 1 month of age.

Furthermore, some of my colleagues have told me that they have seen considerable malaise following the vaccination.

The reason for the difference of opinion concerning the value of the vaccination lies to some extent probably in the fact that no sufficient distinction has been made between the therapeutic and the prophylactic properties of the vaccine. Most of the reports conclude that if given early in the catarrhal stage the vaccine will have a good effect; the later the vaccine is given in the convulsive stage, the less effect can be expected. This appears from the reports of most of the Danish officers of health and also is the consensus of the Danish pediatric society.¹

The greatest difficulty in the appraisal of the effect of the whooping cough vaccination is that no suitable control material is at hand. Such a control material that

From the State Serum Institute.

1. Meyer, A. H.; Kristensen, Martin, and Sørensen, Einar: Whooping cough. *A. Pediat.* 4: 21, 1924; abstr., *Ugesk. f. læger*, 1924, 19. Madsen, Thorvald: Whooping Cough: Its Prevention and Treatment, Boston M. & S. J.

is especially well adapted in this respect is found, however, in the Faroe Islands.² The conditions peculiar to these islands cause the whooping cough epidemics to appear in waves separated by quite long intervals entirely free from whooping cough. An epidemic of this kind started in 1923 and continued in 1924. On this occasion, vaccination on a large scale was carried out, 2,094 individuals being vaccinated, whereas this was not possible in 627 cases. The result was that the majority of both vaccinated and nonvaccinated individuals contracted whooping cough. As a prophylactic measure, its value, therefore, was not worth mentioning. On the other hand, only five deaths occurred in the vaccinated group as compared to eighteen deaths in the nonvaccinated group. The mortality in the latter group was therefore twelve times that of the former, and the course of the disease was as a whole much more severe in the nonvaccinated individuals.

Detailed information regarding the disease was obtained by Dr. Zachariassen and is summarized in table 1. The earlier the vaccination was carried out, the better was the effect; the best results were obtained when the vaccination was completed one week before the onset of the disease.

Another whooping cough wave appeared in the Faroe Islands in 1929; Dr. Zachariassen was kind enough to give me his observations. This time, vaccination was carried out in 1,832 individuals, while 446 were not vaccinated. A comparison between these two groups is shown in table 2.

In this epidemic the prophylactic value of the vaccination seems to have been much better than in the first one, 458 of the 1,832 vaccinated avoiding whooping cough, whereas among the 446 nonvaccinated only 8 did not become infected.

The explanation of the favorable results of vaccination in the Faroe Islands probably rests on the following facts: 1. The vaccine was made from young strains.³ 2. The dose used was rather large, a total

TABLE 1.—Comparison of Vaccinated and Nonvaccinated Groups

| | 450 Vaccinated | 405 Nonvaccinated |
|---------------------|----------------|-------------------|
| Mild cases..... | 410 | 275 |
| Moderate cases..... | 35 | 90 |
| Severe cases..... | 4 | 27 |
| Fatal cases..... | 1 | 13 |

TABLE 2.—Analysis of Epidemic of 1929

| | 1,832 Vaccinated | 446 Nonvaccinated |
|---------------------|------------------|-------------------|
| Not attacked..... | 458 | 8 |
| Mild cases..... | 1,336 | 225 |
| Moderate cases..... | 29 | 170 |
| Severe cases..... | 8 | 35 |
| Fatal cases..... | 1 | 8 |

of 22,000 million bacteria. 3. The vaccination was completed shortly before the onset of the epidemic; i. e., at a time when the titer of antibodies produced by the vaccine is highest.⁴

2. Heerup, H.: Erfaringer fra en Kighosteepidemi i Thorshavn Lægekreds August, 1923, til Foraaret 1924, Ugesk. f. Læger. 86: 675 (Sept. 11) 1924. Kofoed, S. E.: Nogle Oplysninger om Optraeden af Kighoste i Sands Præstegaard (Færøerne) 1923-24: Specielt med Henblik paa Anvendelsen af Kighostevaccin, ibid. 88: 585 (June 17) 1926. Rasmussen, R. K.: Om Kighoste og Kighostevaccination i Ejde Lægedistrikt paa Færøerne, Bibliot. f. Læger., 1925, p. 130.

3. Gardner, A. D., and Leslie, P. H.: Early Diagnosis of Whooping Cough by the Cough-Droplet Method, Lancet 1:9 (Jan. 2) 1932.

4. Kristensen, Martin, and Ahrend Larsen, S.: Production d'anticorps après la vaccination contre la coqueluche, Compt. rend. soc. de biol. 95: 1110 (Nov. 5) 1926.

A summary of the results of the two epidemics, 1923-1924 and 1929, both of which occurred during the winter, is shown in table 3.

The mortality in the vaccinated group is therefore one sixteenth of that in the nonvaccinated group. This figure is sufficiently large to prove the usefulness of the vaccination when carried out in time. Furthermore, the disease in vaccinated individuals takes a much

TABLE 3.—Results of Two Epidemics

| | 3,926 Vaccinated | 1,073 Nonvaccinated |
|-----------------|------------------|---------------------|
| Deaths..... | 6 | 26 |
| Percentage..... | 0.15 | 2.4 |

milder course and is of shorter duration. It is worth mentioning that no selection whatever was made between the vaccinated, so that the nonvaccinated and vaccinated groups of individuals in both epidemics were quite comparable in respect to age, time of epidemic and surrounding conditions.

LIVER-GASTRIC TISSUE PREPARATIONS IN THE TREATMENT OF PER- NICIOUS ANEMIA

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The therapeutic effectiveness of liver and fractions of liver in the treatment of patients with pernicious anemia is well established. Minot, Cohn, Murphy and Lawson,¹ and Zerfas² have demonstrated that the amount of liver extract No. 343 derived from 300 Gm. of whole liver (from 12 to 14 Gm. of the dried powder) is the minimal amount required to produce maximal reticulocyte responses when fed daily by mouth to patients with pernicious anemia in relapse. Sharp,³ Sturgis and Isaacs,⁴ Conner,⁵ Wilkinson⁶ and others have shown that preparations of hog gastric tissue are likewise effective when fed daily in amounts equivalent to from 200 to 300 Gm. of fresh stomach tissue (from 30 to 40 Gm. of desiccated material). Following the work of Castle and his associates,⁷

From the Lilly Laboratory for Clinical Research, Indianapolis City Hospital, and the Department of Medicine, Indiana University School of Medicine.

1. Minot, G. R.; Cohn, E. J.; Murphy, W. P., and Lawson, H. A.: Treatment of Pernicious Anemia with Liver Extracts: Effects on the Production of Immature and Mature Red Blood Cells, Am. J. M. Sc. 175: 599 (May) 1928.

2. Zerfas, L. G.: Liver Extract for Pernicious Anemia: Blood Changes During the First Month; Report of 101 Cases, Arch. Int. Med. 47: 135 (Jan.) 1931.

3. Sharp, E. A.: An Antianemic Factor in Desiccated Stomach, J. A. M. A. 93: 749 (Sept. 7) 1929.

4. Sturgis, C. C., and Isaacs, Raphael: Desiccated Stomach in the Treatment of Pernicious Anemia, J. A. M. A. 93: 747 (Sept. 7) 1929.

5. Conner, H. M.: The Feeding of Gastric Tissue in the Treatment of Pernicious Anemia, J. A. M. A. 96: 500 (Feb. 14) 1931.

6. Wilkinson, J. F.: Pernicious Anemia: Preliminary Report of Results Obtained by Treatment with Certain Preparations of Stomach, Brit. M. J. 1: 236 (Feb. 8) 1930.

7. Castle, W. B.: Observations on the Etiological Relationship of Achylia Gastrica to Pernicious Anemia: I. The Effect of the Administration to Patients with Pernicious Anemia of the Contents of the Normal Human Stomach Recovered After Ingestion of Beef Muscle, Am. J. M. Sc. 178: 748 (Dec.) 1929. Castle, W. B., and Townsend, W. C.: Observations on the Etiological Relationship of Achylia Gastrica to Pernicious Anemia: II. The Effect of the Administration to Patients with Pernicious Anemia of Beef Muscle After Incubation with Normal Human Gastric Juice, ibid. 178: 764 (Dec.) 1929. Castle, W. B.; Townsend, W. C., and Heath, C. W.: Observations on the Etiological Relationship of Achylia Gastrica to Pernicious Anemia: III. The Nature of the Reactions Between Normal Human Gastric Juice and Beef Muscle Leading to Clinical Improvement and Increased Blood Formation Similar to the Effect of Liver Feeding, ibid. 180: 305 (Sept.) 1930.

Reimann⁸ reported a marked increase in the potency of liver when it was digested in normal human gastric juice. Walden and Clowes⁹ obtained a very active preparation made by the interaction of liver or liver extract No. 343 with small amounts of fresh hog gastric tissue, indicating that from 4 to 6 Gm. was as effective therapeutically as from 12 to 17 Gm. of liver extract No. 343 or from 30 to 40 Gm. of desiccated whole stomach.

We¹⁰ have since demonstrated that when subminimal amounts of liver extract No. 343 (that derived from 100 Gm. of liver) were incubated with 100 cc. of normal human gastric juice—itself inactive—for four hours at 40 C. and fed daily to patients with pernicious anemia, maximal reticulocyte responses were obtained. The explanation for the enhanced activity of subminimal amounts of liver and fractions of liver, when incubated with small amounts of fresh hog gastric tissue or with normal human gastric juice, remains to be determined. Further experiments are in progress which may help to explain the enhanced potency of such preparations.

ment were too high for reticulocyte responses to be obtained, have been followed as outpatients, at monthly intervals, for from four and one-half to thirteen months.

RETICULOCYTE RESPONSES

In table 1, the height of the reticulocyte responses, the initial red blood cell counts, the percentages of hemoglobin and the level of the blood at the end of the first month of treatment may be found. Except in a few instances, the absolute number of reticulocytes obtained compares favorably with that obtained by Minot and his associates and by one of us (L. G. Z.).

Case 3 did not show a maximal response of the reticulocytes when nine capsules of Extralin were given daily. Subsequently, an increase of reticulocytes up to 9 per cent (absolute number 168,300) was obtained when the amount of liver extract No. 343 derived from 300 Gm. of whole liver was administered daily. The red blood cell count and hemoglobin did not respond, however, until liver extract was given by injection. Patients 4, 8 and 9 had had slight reticulocyte responses immediately preceding the Extralin therapy, so that

TABLE 1.—Response of the Blood of Fifteen Patients with Pernicious Anemia in Relapse to Extralin Therapy

| Case | At Beginning of Treatment | | | Extralin Capsules, Number per Day | Day of Reticulocyte Peak | Reticulocyte Percentage at Peak | Absolute Number Reticulocytes per Cu.Mm. at Peak | At End of First Month | |
|------|-------------------------------------|----------------------------------|-------------------------|-----------------------------------|--------------------------|---------------------------------|--|-------------------------------------|----------------------------------|
| | Red Blood Cells Millions per Cu.Mm. | Hemoglobin Percentage (Newcomer) | Reticulocyte Percentage | | | | | Red Blood Cells Millions per Cu.Mm. | Hemoglobin Percentage (Newcomer) |
| 1 | 1.14 | 20.7 | 0.8 | 12 | 7 | 31.6 | 505,600 | 2.90 | 60.2 |
| 2 | 1.16 | 40.4 | 0.3 | 12 | 8 | 21.3 | 366,300 | 3.41 | 68.8 |
| 3 | 1.28 | 30.2 | 0.5 | 9 | 9 | 8.0 | 137,600 | .... | .... |
| 4* | 1.30 | 31.5 | 1.7 | 12 | 10 | 10.7 | 172,270 | 3.55 | 66.1 |
| 5a | 1.53 | 40.4 | 0.4 | 12 | 7 | 16.5 | 513,500 | 4.25 | 59.0 |
| 6 | 1.54 | 41.0 | 4.5 | 12 | 8 | 17.6 | 380,140 | .... | .... |
| 7 | 1.68 | 41.5 | 0.2 | 12 | 10 | 22.7 | 535,500 | 3.22 | 50.0 |
| 8* | 1.70 | 42.0 | 4.8 | 12 | 6 | 13.7 | 297,390 | 3.72 | 74.7 |
| 5b | 1.71 | 33.0 | 1.4 | 12 | 8 | 28.0 | 464,800 | 3.97 | 50.6 |
| 9* | 1.95 | 45.8 | 0.2 | 12 | 8 | 12.4 | 271,100 | 3.04 | 66.8 |
| 10 | 1.98 | 40.4 | 0.1 | 12 | 8 | 18.5 | 445,800 | 4.20 | 59.8 |
| 11 | 2.08 | 50.5 | 0.1 | 12 | 8 | 16.4 | 428,000 | .... | .... |
| 12 | 2.11 | 64.3 | 0.1 | 9 | 8 | 11.2 | 286,600 | .... | .... |
| 13 | 2.54 | 68.8 | 1.9 | 12 | 9 | 4.3 | 113,950 | 3.77 | 72.4 |
| 14 | 3.09 | 68.8 | 0.9 | 9 | 10 | 4.0 | 154,000 | .... | .... |
| 15 | 3.34 | 76.4 | 0.0 | 12 | 8 | 7.5 | 221,230 | 4.35 | 74.7 |

* These patients had had slight reticulocyte responses to other medication just previous to beginning Extralin therapy.

Our purpose in this paper is to report the clinical results observed when the material¹¹ prepared by Walden and Clowes was fed daily to patients with pernicious anemia. Many of the lots were experimental in character and contained varying amounts of liver or fractions of liver and hog gastric tissue. In the preparations used, the proportion of original fresh liver, or extract No. 343 derived therefrom, to that of fresh hog gastric tissue varied from 20 to 2 parts of liver to 1 part of stomach. The weight of the material contained in twelve capsules varied between 5 and 6 Gm., averaging 5.8 Gm.

To test the potency of this material in the treatment of patients with pernicious anemia, two methods were employed: 1. In a small series of patients who were in relapse at the beginning of therapy, the reticulocyte response and subsequent increase in red blood cells and hemoglobin following the administration of this material was observed. 2. A larger group of patients, most of whose red blood cell counts at the beginning of treat-

maximal responses could not be expected. Accompanying the reticulocyte responses there was the usual marked clinical improvement of the patients.

In table 2 are recorded the reticulocyte responses of four patients who have responded both to the amount of liver extract No. 343 derived from 300 Gm. of liver and to Extralin. It is evident from this table that twelve capsules of Extralin produced as great, if not greater responses of the reticulocytes than did the amount of liver extract No. 343 derived from 300 Gm. of whole liver, when tested on the same patients. Nine capsules daily seemed to be definitely submaximal.

The red blood cell counts of eleven patients who had had reticulocyte responses and who had received only Extralin therapy averaged 3.67 million at the end of the first month of treatment, as compared with 3.5 million reported by Zerfas when the amount of liver extract No. 343 derived from 300 to 600 Gm. of liver was fed daily, and 3.72 million reported by Minot when the amount of liver extract No. 343 derived from 600 Gm. of liver was administered. Six patients who received twelve capsules a day until their red blood cell counts reached normal levels required on the average 3.1 months, while one patient who received nine capsules a day required seven months, thus indicating the inadequacy of this daily amount of material. Minot and his associates stated that "after two months of adequate therapy with liver, red blood cell count

8. Reimann, F.: Versuche zur Potenzierung der Wirkung oral verabreichter Leber, *Med. Klin.* 27: 880 (June 12) 1931.

9. Walden, G. B., and Clowes, G. H. A.: Pernicious Anemia: Method Whereby Therapeutic Efficacy of Liver and Liver Fractions May Be Substantially Increased, *Proc. Soc. Exper. Biol. & Med.* 29: 873 (April) 1932.

10. Helmer, O. M.; Fouts, P. J., and Zerfas, L. G.: Increased Potency of Liver Extract by Incubation with Human Gastric Juice, *Proc. Soc. Exper. Biol. & Med.* 30: 775 (March) 1933.

11. The substance made by the interaction of liver or fractions of liver with hog gastric tissue has been designated by Walden and Clowes as "Extralin." The preparations employed have been supplied by Eli Lilly & Co.

vicinity of 5 million per cubic millimeter are to be expected." A group of eleven of our patients, selected at random, treated with adequate amounts of liver extract No. 343, required on the average 2.6 months for the red blood counts to reach normal levels.

MAINTENANCE DOSAGE

Table 3 shows the average red blood cell counts, the percentages of hemoglobin, and the length of time the various patients have remained on Extralin therapy, as well as similar figures for some of the patients who received other medication.

Sixteen patients have received nine capsules a day over periods of time varying between five and one-half and thirteen months (average 9.6 months). Of these, four have been unable to maintain their red blood cell counts at normal (4.5 million per cubic millimeter), while eight have been unable to maintain the hemoglobin at or above 85 per cent. It was observed that one patient who received from three to six capsules a day did not maintain the red blood cells and hemoglobin percentage at normal levels but subsequently has been able to do so for a period of six months while taking nine capsules a day. Twelve of the sixteen patients receiving

above five million while taking twelve capsules of Extralin daily. The percentage of hemoglobin, however, still remains subnormal. Thus, with the three types of therapy employed, the hemoglobin percentage has not increased satisfactorily, though the level of the red blood cells can be maintained at normal. The use of large daily amounts of iron is definitely indicated in this instance. Patient 36, likewise, failed to maintain a normal red blood cell count while receiving weekly injections of liver extract; yet satisfactory progress has been made during the past nine months when twelve capsules of Extralin a day have been administered.

Six of the eight patients who received nine capsules of Extralin a day and who were unable to maintain the percentage of hemoglobin at normal levels had some complication, such as moderate to advanced central nervous system involvement, generalized arteriosclerosis, chronic infections, or other noninfectious complications, though a similar proportion of the patients who have maintained the hemoglobin at normal levels have also had complications. Of the seventeen patients receiving twelve capsules a day who were unable to keep the percentage of hemoglobin above 85, thirteen

TABLE 2.—Comparative Responses of the Blood of the Same Patients to Liver Extract No. 343 and to Extralin

| Case | At Beginning of Treatment | | | Treatment | | Day of Reticuloocyte Peak | Reticuloocyte Percentage at Peak | Absolute Number Reticuloocytes per Cu. Mm. at Peak |
|------|--------------------------------------|----------------------------------|--------------------------|--|-----------------------------------|---------------------------|----------------------------------|--|
| | Red Blood Cells Millions per Cu. Mm. | Hemoglobin Percentage (Newcomer) | Reticuloocyte Percentage | Liver Extract No. 343 Derived From Gm. Liver Daily | Extralin Capsules, Number per Day | | | |
| 2a | 0.90 | 20.8 | 4.4 | 300 | .. | 8 | 19.2 | 135,400 |
| 2b | 1.16 | 40.4 | 0.3 | ... | 12 | 8 | 21.3 | 306,300 |
| 5a | 2.01 | 28.4 | 1.0 | 300 | .. | 5 | 18.6 | 302,400 |
| 5b | 1.53 | 40.4 | 0.4 | ... | 12 | 7 | 10.5 | 313,500 |
| 5c | 1.71 | 33.0 | 1.4 | ... | 12 | 8 | 23.0 | 464,800 |
| 12a | 1.83 | 39.5 | 2.4 | 300 | .. | 6 | 18.7 | 394,670 |
| 12b | 1.81 | 62.5 | 4.6 | 300 | .. | 8 | 14.3 | 321,000 |
| 12c | 2.11 | 64.3 | 0.1 | ... | 9 | 8 | 11.2 | 256,620 |
| 14a | 1.05 | 34.7 | 3.1 | 300 | .. | 9 | 12.9 | 194,800 |
| 14b | 3.09 | 68.8 | 0.9 | ... | 9 | 10 | 4.0 | 154,000 |

nine capsules of Extralin a day had been observed by this department for a period of one year or more, preceding the commencement of Extralin therapy; of these, eight failed to maintain normal red blood cell counts when taking daily the amount of liver extract No. 343 derived from 100 to 400 Gm. of whole liver, although all but one of these eight patients have done so while taking nine capsules of Extralin a day.

The thirty-one patients who received twelve capsules a day for from four and one-half to thirteen months (average 8.3 months) maintained normal red blood cell counts, although seventeen patients of this group were unable to maintain the hemoglobin at or above 85 per cent. Fourteen of the thirty-one patients had been treated with other therapeutic substances for at least eight months preceding the use of Extralin, and only five had failed to maintain their red blood counts at normal levels while taking the amount of liver extract derived from 200 to 400 Gm. of liver daily.

Patient 37 was unable to maintain a normal red blood cell count and percentage of hemoglobin when the amount of liver extract No. 343 derived from 300 Gm. of whole liver was given daily during a period of twelve months. Following this, the amount of liver extract No. 343 derived from 100 Gm. of liver was injected intravenously at weekly intervals for a period of thirteen months, and, while the red blood cell count did reach a slightly higher level, the percentage of hemoglobin decreased. For a period of six months now, this patient has maintained a red blood cell count of

had complications, while only seven of the remaining fourteen had complications. Three of the four patients who were unable to maintain the red blood cell counts at normal while taking nine capsules a day also had some type of complication.

The three patients who died during treatment had one or more complications in addition to marked central nervous system involvement. Patient 12, aged 66, owing to voluntary omission of therapy for about two weeks before death, had a systemic relapse with exacerbation of chronic cystitis and died following the development of bronchopneumonia. Patient 25, aged 60, received twenty-four capsules of Extralin a day during the last four months of her illness but died following an acute exacerbation of a pyonephrosis. Patient 28, aged 57, had mild diabetes mellitus and markedly deforming hypertrophic arthritis of six years' duration and died following an acute cardiac failure, although the patient had been taking regularly twelve capsules of Extralin a day.

All the patients who have received both types of medication prefer to take the capsules rather than the powder.

COMMENT

The results obtained indicate that the product of the interaction of a subminimal amount of liver or liver extract and a small amount of hog stomach tissue, as described by Walden and Clowes, is highly effective in the treatment of pernicious anemia. The maximal reticuloocyte responses obtained demonstrate that twelve

capsules are equivalent to the amount of liver extract No. 343 derived from 300 to 400 Gm. of whole liver. However, it appears that the time required for the patient to reach a normal red blood cell level is slightly longer when Extralin is used. Although essentially all the patients received both types of therapy gratis, we feel that many of them have taken the capsules containing Extralin with greater regularity than they did the liver extract and have therefore maintained their red blood cell counts at much higher levels. The fact that the patients prefer the capsules must be considered in comparing the ability of the two preparations to

The fact that 50 per cent of the patients continue to have subnormal hemoglobin values, although their red blood cell counts have been maintained at normal levels, indicates that iron in large doses should be used in conjunction with the Extralin. Seven of the patients are now receiving iron and ammonium citrate in doses of 45 grains (3 Gm.) a day. Except for one patient, all have shown an increase in the percentage of hemoglobin during the first month on this additional therapy. These patients have not received the iron for a sufficient length of time to determine whether the hemoglobin will return to normal and be maintained at that

TABLE 3.—Average Red Blood Cell Counts and Hemoglobin Percentages of Patients with Pernicious Anemia While Receiving Extralin Therapy and Liver Extract No. 343 Therapy

| Case | Age | Months | Previous Treatment | | | Extralin Therapy | | | |
|------|-----|--------|--|--|--|------------------|-------------------------------------|--|--|
| | | | Liver Extract No. 343 Derived from Grams Liver Daily | Average Red Blood Cell Count, Millions per Cu. Mm. | Average Hemoglobin Percentage (Newcomer) | Months | Number of Extralin Capsules per Day | Average Red Blood Cell Count, Millions per Cu. Mm. | Average Hemoglobin Percentage (Newcomer) |
| 1 | 41 | 12 | 200 | 5.42 | 69.9 | 13 | 9 | 5.16 | 93.3 |
| 2 | 52 | 16 | 200-300 | 4.24* | 92.1 | 7 | 9 | 4.99 | 92.0 |
| 3 | 64 | .. | .. | .. | .. | 13 | 9 | 4.91 | 84.5 |
| 4 | 66 | 12½ | 200-400 | 3.93* | 84.2 | 13 | 9 | 4.88 | 88.7 |
| 5 | 50 | .. | .. | .. | .. | 8½ | 9-12 | 4.13* | 76.2 |
| 6 | 57 | 12 | 300-400 | 4.30 | 74.5 | 12 | 9 | 4.75 | 75.4 |
| 7 | 63 | 24 | 200-300 | 4.24* | 89.0 | 13 | 9 | 4.67 | 82.5 |
| 8 | 49 | 12 | 200-300 | 4.00* | 83.0 | 10 | 9 | 4.50 | 83.3 |
| 9 | 51 | 12 | 200-300 | 4.82 | 78.9 | 12 | 9-12 | 4.71 | 80.3 |
| 10 | 65 | 12 | 300 | 5.39 | 97.7 | 13 | 9 | 5.12 | 91.4 |
| 11 | 63 | 13 | 300 | 4.32* | 71.4 | 7½ | 9 | 4.53* | 80.6 |
| 12 | 63 | .. | .. | .. | .. | 6 | 12 | 5.19 | 74.9 |
| 13 | 65 | .. | .. | .. | .. | 7 | 9 | 4.36 | 78.3† |
| 14 | 77 | 12½ | 300 | 5.36 | 90.4 | 11½ | 9 | 5.07 | 88.9 |
| 15 | 60 | 13 | 100 | 4.55* | 92.1 | 5½ | 9 | 5.43 | 80.0 |
| 16 | 55 | 13 | 300 | 4.58* | 89.1 | 6 | 3-6 | 3.46* | 82.1 |
| 17 | .. | .. | .. | .. | .. | 6 | 9 | 4.60 | 91.4 |
| 18 | 49 | .. | .. | .. | .. | 11 | 9 | 4.46 | 81.8 |
| 19 | 60 | 8½ | 300 | 4.82 | 87.0 | 10½ | 12 | 5.12 | 89.0 |
| 20 | 64 | 24 | 200 | 4.93 | 82.1 | 10 | 12 | 5.34 | 80.5 |
| 21 | 56 | 13 | 300 | 4.99 | 83.7 | 10 | 12 | 5.21 | 77.4 |
| 22 | 64 | 12 | 300-400 | 3.97* | 71.3 | 10½ | 12 | 4.84 | 75.6 |
| 23 | 55 | 13 | 300 | 5.12 | 81.1 | 13 | 12 | 5.01 | 82.3 |
| 24 | 59 | .. | .. | .. | .. | 12 | 12 | 5.19 | 89.4 |
| 25 | 58 | 12½ | 100-200 | 4.85 | 91.0 | 11 | 12 | 4.83 | 83.9 |
| 26 | 44 | .. | .. | .. | .. | 11 | 12 | 5.61 | 91.7 |
| 27 | 60 | .. | .. | .. | .. | 7 | 12-24 | 4.83 | 72.8† |
| 28 | 32 | .. | .. | .. | .. | 10 | 12-15 | 4.79 | 91.0 |
| 29 | 41 | .. | .. | .. | .. | 10 | 12 | 4.94 | 61.5 |
| 30 | 57 | .. | .. | .. | .. | 13 | 12 | 4.83 | 76.1† |
| 31 | 67 | 13½ | 100-600 | 4.98 | 101.3 | 12 | 12 | 5.33 | 95.4 |
| 32 | 60 | .. | .. | .. | .. | 11 | 12 | 4.67 | 75.5 |
| 33 | 72 | .. | .. | .. | .. | 8 | 12 | 5.55 | 90.2 |
| 34 | 77 | .. | .. | .. | .. | 10 | 12 | 4.62 | 81.0 |
| 35 | 47 | .. | .. | .. | .. | 7 | 12 | 5.01 | 90.6 |
| 36 | 43 | .. | .. | .. | .. | 11 | 12 | 4.85 | 84.8 |
| 37 | 59 | 8 | 100† | 5.50 | 94.5 | 5 | 12 | 5.62 | 93.4 |
| 38 | 64 | 6 | 100† | 4.17 | 83.2 | 9 | 12 | 4.82 | 82.6 |
| 39 | 57 | 13 | 100† | 4.62 | 73.9 | 6 | 12 | 5.09 | 79.4 |
| 40 | 70 | 9 | 100† | 4.63 | 90.1 | 6½ | 12 | 5.32 | 80.9 |
| 41 | 74 | 13½ | 300-400 | 4.34* | 95.3 | 11 | 12 | 5.14 | 93.3 |
| 42 | 68 | .. | .. | .. | .. | 7 | 12 | 4.97 | 81.2 |
| 43 | 61 | .. | .. | .. | .. | 4½ | 12 | 4.82 | 72.9 |
| 44 | 47 | 8 | 100† | 5.19 | 86.7 | 5 | 12 | 4.86 | 91.4 |
| 45 | 65 | 12 | 200 | 4.56* | 83.5 | 9 | 12 | 4.65 | 81.9 |
| 46 | 73 | .. | .. | .. | .. | 5½ | 12 | 4.48 | 90.5 |
| 47 | 66 | 12 | 200-300 | 4.36* | 83.1 | 12 | 12 | 4.96 | 83.9 |
| 48 | .. | .. | .. | .. | .. | 6 | 12 | 4.85 | 83.1 |

* Patients in partial relapse, indicating that the maintenance dose employed was inadequate.

† Patients died during therapy with red blood cell counts at or near normal levels.

‡ Patients given liver extract No. 343 derived from 100 Gm. of liver parenterally per week.

maintain the red blood cell counts at normal levels. Many of the patients have not been studied for a sufficient length of time as yet regarding their maintenance dosage requirements, but the fact that twenty-five patients have maintained normal red blood cell counts for at least ten months, while taking from nine to twelve capsules a day, indicates that this amount of material furnishes sufficient "active principle" for the treatment of a goodly percentage of persons with pernicious anemia. The data also indicate that the contents of twelve capsules of Extralin administered daily is preferable as a maintenance dose in the majority of patients. As with any type of therapy for pernicious anemia, continued observation of the patients is necessary in order to determine whether the individual is receiving a sufficient amount of the active principle.

level. Minot and Castle,¹² Beebe and Lewis,¹³ Fouts and Zerfas¹⁴ and others have indicated that in some cases of pernicious anemia the addition of iron to the therapy is highly advantageous.

CONCLUSIONS

1. The product of the interaction of subminimal amounts of liver or liver extract and small amounts of hog gastric tissue (Extralin), as described by Walden and Clowes, is highly effective in the treatment of patients with pernicious anemia.

12. Minot, G. R., and Castle, W. B.: Adequate Treatment of Anemia, *Ann. Int. Med.* 5:159 (Aug.) 1931.

13. Beebe, R. T., and Lewis, G. E.: The Maintenance Dose of Potent Material in Pernicious Anemia, *Am. J. M. Sc.* 181:796 (June) 1931.

14. Fouts, P. J., and Zerfas, L. G.: Maintenance Dosage of Liver Extract in the Treatment of Pernicious Anemia, *Ann. Int. Med.* 6:1298 (April) 1933.

2. Twelve capsules of Extralin daily produced a maximal response of the blood and was adequate to maintain the blood at normal levels in the majority of patients.

3. The additional use of iron in large daily amounts is indicated in patients with subnormal hemoglobin values.

Locke and Tenth streets.

ACTIVE IMMUNIZATION AGAINST DIPHTHERIA

A RAPID METHOD WITH A SINGLE INJECTION

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The importance of active immunization against diphtheria in the control of this disease has been amply demonstrated. This fact is well illustrated in a recent report on this question published in the weekly health bulletin of the Connecticut State Department of Health. In 1920, previous to the introduction of active immunization, the incidence of diphtheria for each 100,000 inhabitants of that state was 269.4. In the succeeding years, with a single exception, this rate gradually declined until in 1932 it reached the low point of 15.8. It is estimated that, during this period, 31,511 persons in Connecticut had escaped the disease as a result of the preventive measures which had been taken.

Two preparations have previously been employed: (1) slightly toxic mixtures of toxin and antitoxin; and (2) detoxified toxin or toxoid. The latter has practically displaced toxin-antitoxin mixtures, especially in the immunization of young children. Its advantages over the older preparation are that (a) toxoid contains no foreign serum, (b) it is stable, (c) it is nontoxic and (d) it is superior as an antigen.

The technic recommended by the New York City Department of Health originally required three injections of 0.5 cc. each, to be given at weekly intervals. More recently, two injections of 1 cc. each, given two weeks apart, have been recommended. The toxoid contains from 5 to 10 antigenic units per cubic centimeter. The practical advantages in reducing the number of injections while maintaining a high rate of immunization are obvious.

With the toxoid preparation to be described, it has been possible to immunize actively over 99 per cent of the cases in the series with but a single injection. The principle involved is that of continuous antibody stimulation afforded by the slow absorption of small amounts of concentrated antigen.

It has been stated by Glenn¹ that the immunity produced by the injection of an antigen in a nonimmune animal does not depend entirely on the total amount of antigen injected. The time spacing of the stimulus or the continuance of the stimulus is of great importance. If the antigen is rapidly absorbed and eliminated, only slight stimulation may occur even when large doses are injected.

PREPARATION²

The material used in this study was prepared in the following manner: Diphtheria toxoid (M. L. D. 500

per cubic centimeter; $L + 0.13$; $L. F. 0.1$), 7,300 cc., was placed in cellophane bags and fanned at room temperature until the volume was reduced to 250 cc. The dark colored granular precipitate that formed was removed by centrifugation. The supernatant fluid was diluted up to 730 cc. in the process of twenty-four hour dialysis in a cellophane sac and by the addition of distilled water. Phenol (0.5 per cent) was added and the solution was filtered through a Berkefeld candle. The least fatal dose of the concentrated solution was $0.014 \pm$.

In a similar way, the solution was further concentrated to 73 cc. (100:1 concentration). This was preserved, after Berkefeld filtration, with merthiolate in a final concentration of 1:10,000. This concentrated fluid was found to contain 300 flocculating units per cubic centimeter.

Two batches of the lanolin mixture were prepared as follows: Batch 301-H-11 was made by thoroughly mixing, at 42 C., 100 cc. of sterile hydrous wool fat and 50 cc. of concentrated diphtheria toxoid. One cc. of this mixture thus contained 100 flocculating units and 0.2 cc. contained 20 flocculating units. Batch 301-H-12 was made in the same way as 301-H-11 with the exception that, to each quantity of 0.2 cc. of the mixture, 0.05 cc. of sterile olive oil was added.

The material was received in individual miniature antitoxin syringes, each containing a single dose. The preparation is of the consistency of a soft wax and is easily expelled from the syringe.

ADMINISTRATION AND RESULTS

The air is first expelled from the syringe. Then, under aseptic precautions, the contents amounting to 0.2 cc. or 0.25 cc. are injected deeply into the deltoid muscle with the needle at a right angle to the skin. The intramuscular route is chosen for the same reasons that it is preferred as the site of injection for drugs suspended in oils. If the injection is not delivered intramuscularly, a tiny mass may be felt at the injected site until complete absorption takes place.

The toxoid-lanolin mixture was injected in 103 subjects, all but five of whom were children. The five adults were nurses in training. The ages of the children varied from seven and a half months to twelve years. The largest number were of preschool age. They were selected from the pediatric outpatient department of the Brooklyn Jewish Hospital and so were representative of the poorer class of the city's population. In each case, a Schick test was done on one forearm and a control with heated toxin on the other forearm. The test material used was that regularly supplied by the city department of health and was well within the expiration date printed on the package. Schick and control tests were read on the third to the fifth day. Those showing a positive Schick and negative control were given the immunizing injection.

As it was desired to learn how soon after injection active immunity could be demonstrated, various members of the group were given Schick tests at intervals varying from three to eight weeks. Although the numbers in each group are too small for the percentages to have a statistical value, it is nevertheless interesting to note that active immunity as evidenced by the reversal of the Schick test from positive to negative

From the Department of Pediatrics of the Jewish Hospital of Brooklyn.

1. Glenn, A. T.: The Principle of Immunity Applied to the Protective Inoculation Against Diphtheria, *J. Hyg.* 24: 301 (Dec.) 1925.

2. The material used in this study was prepared by Mr. Edwin Voigt of the Lederle Laboratories.

was demonstrated in a large percentage of the cases in from three to four weeks after the single immunizing injection. In one of the adults, the Schick test was negative two weeks after the immunizing injection. Table 1 shows the development of immunity by weeks. Table 2 is a summary of the entire series.

TABLE 1.—*Results Following Single Intramuscular Injection of Mixture of Toxin and Hydrous Wool Fat*

| Number Tested | Number of Schick Tests Negative After | | | | | | |
|---------------|---------------------------------------|---------|---------|---------|---------|---------|---------|
| | 2 Weeks | 3 Weeks | 4 Weeks | 5 Weeks | 6 Weeks | 7 Weeks | 8 Weeks |
| 4 | 1 | .. | .. | .. | .. | .. | .. |
| 14 | .. | 13 | .. | .. | .. | .. | .. |
| 64 | .. | .. | 53 | .. | .. | .. | .. |
| 15 | .. | .. | .. | 13 | .. | .. | .. |
| 13 | .. | .. | .. | .. | 13 | .. | .. |
| 6 | .. | .. | .. | .. | .. | 6 | .. |
| 2 | .. | .. | .. | .. | .. | .. | 1 |

TABLE 2.—*Summary of Results Obtained in One Hundred and Three Patients*

| Number Receiving Single Intramuscular Injection of Mixture of Toxin and Hydrous Wool Fat | Schick Negative Within Two Months | Per Cent |
|--|-----------------------------------|----------|
| 103 | 102 | 99 |

Those who still had a positive Schick test two, three or four weeks after injection (fifteen out of eighty-two) were given a Schick test a second time two weeks later and, with a single exception, were then found negative. In the group in which Schick tests were made from five to eight weeks after the immunizing injection, only one out of thirty-six was Schick positive. This one remained positive four months after injection. With the exception of the last case, none were given additional Schick tests more than twice and none were given more than the one immunizing dose. For practical purposes and to obviate the necessity for additional Schick tests, it seems proper that the Schick test be repeated two months after the immunizing injection. Of the 103 cases in this study, 102, or 99 per cent, were Schick negative within two months.

REACTIONS

No reactions were observed in children under five years of age. In the school age group there was an occasional complaint of soreness in the arm for a day or two with slight local redness and, in one case, a temperature of 101 during the first twenty-four hours. In the adult group, five who had positive Schick but negative control reactions were included in the series. They complained only of a heavy feeling in the arm. Five other adults (not included in the series) who gave positive Schick and control tests were given the injection. Of these, two gave severe reactions with a rise of temperature to 102, headache, malaise, a large area of local redness with induration, and regional adenitis. The fever subsided in twenty-four hours. The three remaining persons had mild local reactions without constitutional symptoms. The reactions to be expected, then, are the same as those obtained with ordinary toxoid. They are infrequent and quite mild in older children and absent in those of preschool age. The more severe reactions are to be expected in those patients who give positive reactions to both Schick and heated control material.

SUMMARY AND COMMENT

A concentrated diphtheria toxoid incorporated in hydrous wool fat has been used for active immuniza-

tion. Immunity was established in 99 per cent of 103 cases within two months following a single injection. It is believed that the slow absorption and elimination afforded by the hydrous wool fat is mainly responsible for the good results obtained. This effect may be obtained in other ways, as for example with alum treated toxoid, as reported by Park and Schroder,³ who gave three injections of 0.5 cc. each at weekly intervals. Wells, Graham and Havens⁴ were able to induce immunity in 94 per cent of ninety-eight children after eight weeks with a single injection of 1 cc. of the alum treated toxoid. There seems to be no doubt that effective active immunization against diphtheria through a single injection is an accomplished fact.

CONCLUSIONS

A concentrated diphtheria toxoid incorporated in hydrous wool fat has been injected intramuscularly and actively immunized 99 per cent of 103 patients within a period of two months. In the majority of cases, immunity developed in from three to four weeks and, in one case, as early as two weeks.

Because of the early development of active immunity, a preparation such as that described may have a practical usefulness in checking an epidemic of the disease. A single injection method has obvious practical advantages.

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ACTIONS AND USES OF DINITRO-PHENOL

PROMISING METABOLIC APPLICATIONS

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We have recently shown in a series of papers¹ that alpha-dinitrophenol markedly augments metabolism in doses which are not demonstrably harmful. As this drug may have a number of important clinical applications, it seems desirable to present a summary report of its pharmacologic and therapeutic effects, and to point out certain potential dangers in, and limitations to, its use.

During the World War, dinitrophenol was called to the attention of French physicians by cases of poisoning from it in munitions factories. Only incomplete investigations of the actions of the compound were made at that time, as judged by published reports. Recently, Magne, Mayer, Plantefol and others² have extended or completed work begun some years previously but reported simultaneously with our entirely independent studies. We are in general agreement with them as to the main pharmacologic actions of the drug. The

3. Park, W. H., and Schroder, May C.: Diphtheria Toxin-Antitoxin and Toxoid—A Comparison, *Am. J. Pub. Health* 22:7 (Jan.) 1932.

4. Wells, D. M.; Graham, A. H., and Havens, L. C.: Diphtheria Toxoid Precipitated with Alum: Its Preparation and Advantages, *Am. J. Pub. Health* 22:648 (June) 1932.

From the Division of Neuropsychiatry and the Department of Pharmacology, Stanford University School of Medicine.

Read before the Society for Experimental Biology and Medicine, Pacific Coast Branch, San Francisco, Feb. 8, 1933.

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1. Cutting, W. C., and Tainter, M. L.: *Proc. Soc. Exper. Biol. & Med.* 29:1268 (June) 1932. Tainter, M. L., and Cutting, W. C.: *J. Pharmacol.*, to be published. Hall, V. E.; Field, J.; Sahyun, M.; Cutting, W. C., and Tainter, M. L.: *Am. J. Physiol.*, to be published.

2. Magne, Mayer, Plantefol and others: *Ann. de physiol.* 8:1-176, 1932.

experimental studies have been extended by us and certain possible clinical uses established; summaries of these are given in this report.

GENERAL PROPERTIES

Alpha-dinitrophenol (1-2-4) ($C_6H_3(NO_2)_2OH$) is a yellow crystalline solid, slightly soluble in water, more soluble in alcohol or ether. Solutions may be made up to 3 per cent in water by heating with the addition of

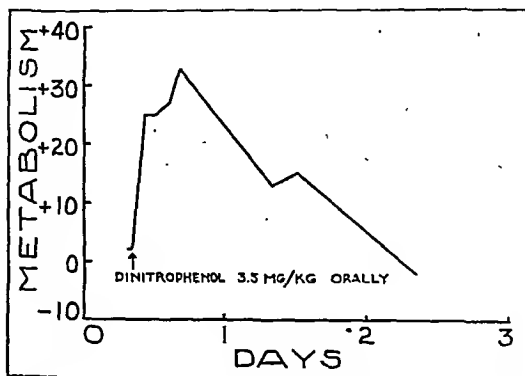


Chart 1.—Effect of a single oral dose of dinitrophenol on the basal metabolic rate.

half the weight of sodium bicarbonate. The melting point is 114 C. It is a dye which is closely related chemically to trinitrophenol (picric acid) and is used as an indicator for hydrogen ion concentrations in the Michaelis technic.³ The dye is readily obtainable on the market in pure form and is rather cheap, which at once indicates a point of superiority over other metabolic stimulants in general use. We have administered it to patients in gelatin capsules, preferably after meals, to avoid irritation of the stomach. To animals, it may be administered in solution by injection, or gastrically.

PHARMACOLOGIC ACTIONS

When dinitrophenol is given to experimental animals, it causes an increase in metabolism within one minute after injection, or somewhat more slowly when given gastrically. The increase in metabolism with doses of 10 mg. per kilogram or less is about 50 per cent. With higher doses, metabolism may be increased fourfold or more, until the animal produces heat so fast that it may be killed by the resulting fever. Return of the metabolism to normal levels may require from six to forty-eight hours, depending on the dose and the route of administration. The increase in metabolism is due to a direct stimulation of cellular metabolism and is not accompanied by an increase in muscular activity. This tremendous upswing of metabolism is not accompanied by important changes in the circulatory system unless asphyxia results from inadequate oxygenation of the blood. Then there may be acceleration of the pulse and rise of blood pressure. There is, however, a very marked increase in respiration, which may be a response to the increased oxygen need or to carbon dioxide production. The respiratory quotient decreases, indicating that the food used for energy is not entirely carbohydrate but must also include fat or protein. The thyroid and suprarenal glands are not indispensable to the metabolic response, since their removal does not interfere with the drug's actions. However, in diabetic

dogs,⁴ dinitrophenol has a greatly increased toxicity, for which there is as yet no adequate explanation. Repeated administrations of the drug for from two to three months to dogs in doses just short of fatal have not resulted in significant injury to important organs, as shown by studies of the urine, icteric index, van den Bergh test, and organs at autopsy and tissues microscopically. The details of these and other pharmacologic and physiologic studies are being published in special journals.

CLINICAL ACTIONS

The actions of dinitrophenol in man agree closely with those in animals when equivalent doses are used.

In eight patients, single doses of from 3 to 5 mg. per kilogram of body weight were given orally to determine the effect on the basal metabolic rate. This was increased from 20 to 30 per cent in the first hour and was maintained at this level for about twenty-four hours. Then it gradually began to fall, reaching normal on the third day. Chart 1 shows a typical result after a dose of 3.5 mg. None of the subjects experienced or showed signs of nervousness, anxiety, trembling, hunger or palpitation. Given orally or subcutaneously, these doses caused no changes in temperature, respiration or pulse rate even after two months of daily administration. Single doses between 5 and 10 mg. per kilogram caused no changes in temperature, pulse or respiration but did make the subjects sweat copiously. Three administrations of single doses of more than 10 mg. per kilogram gave increases in temperature of 3 degrees C. or more, in respiration of 15 to 30 per minute, and of pulse 20 to 30 per minute, all commensurate with the pyrexia. The latter doses are considered too dangerous for routine use.

Daily oral doses of from 3 to 5 mg. per kilogram were given to nine patients for periods of from one to ten weeks. In six of these patients the metabolism was determined repeatedly and found to be maintained at an average of 40 per cent above the initial level. When the drug was discontinued, the rate fell to normal by

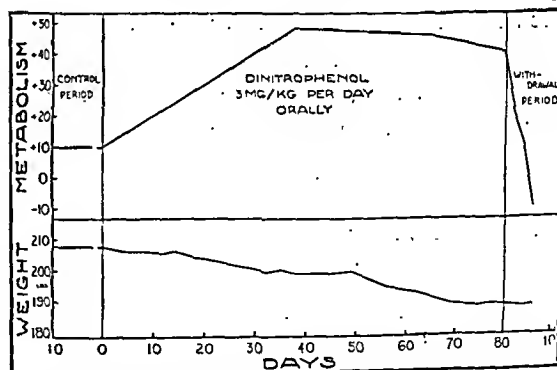


Chart 2.—Effects of repeated daily oral doses of dinitrophenol on basal metabolic rate and body weight, and return of metabolism to normal after administration has been stopped.

the third or fourth day. The metabolic rate and weight changes in one such patient are shown in chart 2.

All these subjects lost body weight without resort to dietary restrictions. The maximum total loss in any patient was 9 Kg. (20 pounds) in ten weeks. The greatest rate of loss was 1.7 Kg. ($3\frac{7}{10}$ pounds) a week after a daily dose of 3 mg. per kilogram. The average loss for the entire group was 0.9 Kg. (2 pounds) a week. More vigorous dosing, perhaps combined with

3. Michaelis, L.: *Praktikum der physikalischen Chemie*, Berlin, Julius Springer, 1926.

4. Tainter, M. L.; Boyes, J. H., and De Eds, F.: *Arch. internat. de pharmacodyn. et de therap.*, to be published.

dietary control, would probably cause more rapid loss of weight. However, we have not felt justified, from our knowledge of the drug's actions, to induce loss of weight more rapidly. These patients did not suffer from any deleterious symptoms as a result of their reducing treatment. On the contrary, they felt better and more active than before.

COMMENT

Preliminary results indicate that dinitrophenol can satisfactorily increase metabolism for therapeutic purposes in patients. The limiting factor would seem to be the fever caused by the increased heat production. The metabolism has been maintained at a rate 50 per cent above normal for months, with no deleterious symptoms, such as the hyperirritability caused by equivalent doses of thyroid gland. Therefore, dinitrophenol offers this advantage over thyroid. It would appear generally useful for increasing the metabolic rate, experimentally and therapeutically.

Oral administration of the drug to obese patients in daily doses of about 3 mg. per kilogram has resulted in steady reduction of their weight, without demonstrable side-actions. Accordingly, extended trials in this clinical condition are justified. The pharmacologic evidence indicates a usefulness of the drug in hypothyroidism and other states of depressed metabolism.

In view of extended clinical applications which the drug may receive, it is desirable to indicate possible dangers from and limitations to its use. First, continuous administrations in animals and patients have been made for periods not longer than three months, and none have been made in patients with serious disease. Therefore, we cannot be sure that manifestations of toxicity may not appear after more prolonged administration, or in important disease states. Secondly, an increased toxicity of the drug is manifested in the experimental diabetes of dogs, although this may not hold in clinical diabetes. The drug would be of great value in this disease if it would enable the diabetic individual to burn carbohydrates, since it is a powder, readily taken by mouth, with an effect persisting several days after a single oral dose. Any attempt to evaluate its usefulness in clinical diabetes should be undertaken with great caution. Thirdly, excessive doses of dinitrophenol may cause a fatal hyperpyrexia. Finally, the possibility of an idiosyncrasy such as an unusual sensitivity or atypical response to the drug should be kept in mind, although we have not seen unusual reactions. In view of these things, we urge that, for the present, dinitrophenol be used only as an experimental therapeutic procedure in carefully selected patients under close observation by the physician.

CONCLUSIONS

1. Dinitrophenol possesses prompt and striking pharmacologic actions, which are similar in animals and men.
2. The outstanding actions are sustained increases in metabolism and body temperature, enormous activity of all metabolic functions, and fatal pyrexia with excessive doses.
3. Doses within therapeutic range cause in man significant increases in metabolism without fever, which may be useful in treatment of obesity, hypothyroidism, and similar depressed metabolic states.
4. There are limitations to and possible dangers from the use of the drug clinically. It should be used only under strictly controlled conditions.

ACUTE EPIDEMIC POLIOMYELITIS
COMPLICATING PREGNANCY

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The occurrence of epidemic poliomyelitis during pregnancy raises several questions. How often does it occur? Should the patient go to term and, if she does, what will be the effect on the labor? Will a viable infant be born? If so, what are the probabilities of intra-uterine infection?

There is no unanimity of opinion as to the frequency of poliomyelitis occurring during pregnancy, nor as to the susceptibility of gravid women to the disease. Aycock¹ believes that poliomyelitis occurs more frequently in the latter part of pregnancy than would normally be expected if the condition had not predisposed to the disease. Jungeblut and Engle² state that early pregnancy and early infancy are the high-water marks of natural resistance to poliomyelitis. The same authors examined the blood of ten women at various stages of pregnancy and found an apparently higher individual virucidal titer than is commonly found in normal persons. Aycock and Kramer³ found no greater percentage of immunity among pregnant women than among the urban adults in general. Alpers and Palmer⁴ and McGoogan⁵ state that poliomyelitis complicating pregnancy is rare.

McGoogan found five cases reported in the literature during the last twenty-five years and adds three of his own, observed in Nebraska over a period of five years. This gives, we believe, the false impression that poliomyelitis complicating pregnancy is extremely rare. Probably many cases observed are not reported. During 1931, three pregnant women with poliomyelitis were admitted to the Willard Parker Hospital (table 1). The total number of patients with poliomyelitis admitted during that year was 1,010. There were thirty over 19 years of age; of these, fifteen were women.

REPORT OF CASES

A summary of the three cases follows:

CASE 1.—D. S., a white primipara, aged 22, was admitted to the Willard Parker Hospital during the ninth month of her pregnancy with a paralytic poliomyelitis of seven days' duration. Her past history was essentially negative. She had uncomplicated measles at 15 years, diphtheria at 17 years and pertussis at 18 years. Her pregnancy up to the present illness had been uneventful. Nine days before admission she had headache, backache, fever and vomiting. Two days later there was weakness of the legs, which progressed to complete paralysis of the right lower extremity and almost complete paralysis of the left lower extremity. The spinal fluid, examined four days before admission was reported as positive for poliomyelitis.

The patient was well developed and well nourished. She complained of backache and pains in the legs and had a little

From the Willard Parker Hospital Department of Hospitals and the Department of Pediatrics, Cornell University Medical College.

1. Aycock, W. L., quoted by Neal, Josephine B.: Poliomyelitis, Baltimore, Williams and Wilkins Company, 1932, p. 416.

2. Jungeblut, C. W., and Engle, E. T.: Resistance to Poliomyelitis, J. A. M. A. 99: 2091 (Dec. 17) 1932.

3. Aycock, W. L., and Kramer, S. D.: Immunity to Poliomyelitis in Mothers and New-Born, J. Exper. Med. 52: 457 (Oct.) 1930.

4. Alpers, B. J., and Palmer, H. D.: The Cerebral and Spinal Complications Occurring During Pregnancy, J. Nerv. & Ment. Dis. 70: 606 (Dec.) 1929.

5. McGoogan, L. S.: Acute Anterior Poliomyelitis Complicating Pregnancy, Am. J. Obst. & Gynec. 24: 215 (Aug.) 1932.

difficulty in sitting up. There was complete flaccid paralysis of both lower extremities, except for the power to move the toes of the left foot. All deep reflexes of the lower extremities were absent. The superficial abdominal reflexes were present but diminished. Otherwise the neurologic examination was negative. The temperature was 99 F. and the pulse 100. The fundus of the uterus was felt just under the xiphoid process. The fetus was in the left occipito-anterior position, the head not engaged. The fetal heart sounds were of good quality and 120 per minute. The patient expected to deliver in two weeks.

The temperature remained normal. The blood pressure was normal and the blood Wassermann reaction was negative. There was no change in the paralysis during the patient's stay in the hospital. After nine days she was discharged to complete her isolation period at home.

Eleven days after discharge, the patient went into labor and was delivered at the Flushing Hospital. Her obstetrician, Dr. J. C. Cohn, wrote us as follows: "The labor was similar to that of the average primipara. After sixteen hours the head was at the perineum and she was delivered by low forceps to save her the strain of the second stage. Her puerperium was normal and uneventful. The baby was normal, weighed 8 pounds and 14 ounces (4,025 Gm.) and is perfectly well now (at 1 year of age)." Five months after discharge the mother was able to get around unaided and a year later walked with only a slight limp of the right leg.

was 140 systolic, 90 diastolic. Delivery was expected early in April, but on February 21 the patient was admitted to the hospital because of labor pains. The same day the patient delivered a normal female infant weighing 4 pounds and 14 ounces (2,210 Gm.). Delivery was spontaneous after a labor of twenty-five hours. There was no excess bleeding, no instrumentation and no laceration. The infant was discharged well at sixteen days of age with a diagnosis of prematurity. There was no paralysis. The mother was examined at various intervals for six weeks postpartum. Her puerperium was normal and uneventful. She walked with a limp of the right leg. A year later (March, 1933), the family was visited by one of our social workers. She found the mother in good health with a barely noticeable limp of the right leg. Her baby is a well developed and well nourished normal infant.

CASE 3.—D. M., a white primipara, aged 19, was admitted to the Willard Parker Hospital during the second month of her pregnancy with a paralytic poliomyelitis of eight days' duration. Her past history was essentially negative. The beginning of her last menstrual period was nine weeks before admission. Morning nausea had been present for one month.

The present illness began nine days before admission with headache, backache, fever, vomiting and pains in the back of the neck and in the legs. The following day she was unable to walk. The day before admission the spinal fluid was found under increased pressure and contained 50 cells per cubic milli-

TABLE 1.—Cases at Willard Parker Hospital in 1931

| Case | Age, Years | Number of Pregnancy | Duration of Pregnancy | Paralysis | Delivery | Child | Follow Up: After 1 Year |
|------------|------------|---------------------|-----------------------|---|--|------------------|--|
| D. S. | 23 | First | 9 mos. | Both lower extremities | Normal, term | Normal | Mother: Slight limp of right leg Baby: Normal, well developed and well nourished |
| F. S. | 23 | First | 4 mos. | Right lower extremity | Premature, normal | Normal premature | Mother: Barely noticeable limp of right leg Baby: Normal, well developed and well nourished |
| D. M. | 19 | First | 1½ mos. | Both lower extremities complete; back and abdomen partial | Abortion at 2 mos. Abortion during 3d month of second pregnancy | | |

CASE 2.—F. S., a white primipara, aged 23, was admitted to the Willard Parker Hospital, Oct. 5, 1931, during the fourth month of her pregnancy, with a paralytic poliomyelitis of eight days' duration. Her last menstrual period was June 28, 1931. Her past history was essentially negative. Twelve days before admission she had headache, fever, vomiting and pains in her legs. Four days later there was weakness of both lower extremities.

The patient was well nourished and well developed and did not appear acutely ill. She complained of backache and pains in the legs. There was stiffness of the neck and lower part of the spine. There was marked weakness of all the muscle groups of the right lower extremity. The knee jerk on the right was absent, but the achilles reflex was present. The deep reflexes of the left lower extremity were sluggish. Otherwise, the neurologic examination was negative. The fundus of the uterus was midway between the symphysis pubis and the umbilicus. The temperature was 99 F. and the pulse 100. The spinal fluid was under slightly increased pressure; there were 20 mononuclear cells per cubic millimeter, and the albumin, globulin and sugar content were normal.

During her stay in the hospital she complained at times of backache and pains in the lower extremities. There was some difficulty in voiding during the first few days, but catheterization was not necessary. Constipation was troublesome. There was no apparent change in the paralysis. Her quarantine period was over after ten days in the hospital and she was discharged, as she requested.

She attended the outpatient department of the Misericordia Hospital. Jan. 22, 1932, she had swollen ankles and puffy eyelids, saw spots before her eyes and had a blood pressure of 150 systolic, 114 diastolic. For the next two weeks she was confined to bed. She had vomiting spells for a few days. On February 5, there were no complaints and the blood pressure

meter, 95 per cent of which were mononuclears, a slightly increased amount of albumin and globulin and a normal amount of sugar.

The patient was well developed and well nourished and did not appear acutely ill. She complained of pains in her back, legs and abdomen. The temperature was 99.6 F. and the pulse 80. There was stiffness of the neck and back. There was a complete flaccid paralysis of both lower extremities. All deep reflexes were absent. There was considerable weakness of the abdominal and back muscles. The abdominal reflexes were absent. The patient could not sit up unaided.

During the first few days in the hospital there was some difficulty in voiding, but catheterization was not necessary. Constipation was troublesome. The pains in the back and legs gradually subsided. During her stay in the hospital there was no change in the paralysis. Thirteen days after admission the patient was discharged to an orthopedic hospital.

The following data were obtained from the case record at the orthopedic hospital to which the patient was admitted: The neurologic examination was the same as that recorded by us. Gynecologic examination revealed a soft cervix and a uterus enlarged to the size of about a two months pregnancy. Because of the improbability of a normal labor and doubtful viability of the fetus, termination of the pregnancy was advised. A week after admission a therapeutic abortion was performed. Her convalescence was uneventful. Orthopedic treatment was given and after two and a half months the patient was discharged in a double upright brace.

Three months later, the patient was readmitted to the hospital because she was pregnant. Her last menstrual period had been just before she was discharged the first time. The paralysis showed very little improvement. For the same reasons as during her first admission, therapeutic abortion was again performed.

Our first patient developed poliomyelitis at the end of her pregnancy. She came to term, had a normal pregnancy and labor and gave birth to a normal baby. This is similar to the majority of cases reported in the literature. The second patient developed poliomyelitis about the middle of her pregnancy. She had a normal labor and gave birth to a normal premature infant by spontaneous delivery about six weeks before term. The third patient developed poliomyelitis early in her pregnancy—some time during the second month. A therapeutic abortion was performed at another hospital.

EFFECT ON PREGNANCY AND LABOR

Not much information is available on the effect of poliomyelitis on pregnancy and labor. Numerous cases of paraplegia (due to trauma, tumor and the like) complicating pregnancy have been reported in the literature, and a normal labor, frequently painless, has been the rule. These have been reviewed recently by

Five of these were normal and one had bilateral clubfoot (which in all likelihood was not due to poliomyelitis). One infant, delivered by cesarean section before the period of viability, showed no deformity. Another, delivered prematurely, died in forty-eight hours but showed no deformity. Two of our patients delivered normal infants. This gives a total of eight living newborn infants without paralysis; one stillbirth and one death soon after premature delivery were apparently not due to poliomyelitis.

Certain other cases reported in the literature suggest that intra-uterine infection may occur. The pertinent points in each report follow:

Potts⁸ reported the case of a man, aged 54, with weakness of both lower extremities and of the left arm and hand which was present since birth, according to the patient as well as his brother and cousin (a physician). The mother was well during her pregnancy except for a fall about the fourth month, which con-

TABLE 2.—Eight Cases Previously Reported

| Author | Number of Pregnancy | Month of Pregnancy | Age of Mother, Years | Paralysis | Delivery | Child |
|---|---------------------|--------------------|----------------------|--|-----------------------------|---|
| Schell, J. T.: New York M. J. 53: 637, 1906..... | Second | 7 | .. | Both lower extremities | Normal term | Normal |
| Renault and Martingay: Bull. et mém. Soc. méd. d. hôp. de Paris 31: 344, 1911 | Third | 5 | 23 | Both lower extremities | Normal term | Normal |
| Miller, N. P.: J. Michigan M. Soc. 23: 58, 1924... | Third | 3 | .. | Both lower extremities | Normal term | Bilateral clubfoot, not poliomyelitis |
| Miller, 1924 | First | 5 | .. | Left lower (cystitis) | Cesarean premature (6 mos.) | Dead (no deformity) |
| Hornung, R., and Creutzfeldt, N. J.: Deutsche med. Wehnschr. 56: 1470, 1920 | First | 8 | 20 | Landry's ascending type with respiratory involvement | Cesarean | Normal |
| McGoogan, ⁹ 1932 | First | 3 | 24 | Right lower extremity | Normal term | Normal |
| McGoogan, 1932 | Second | 3 | 32 | Hip muscles and bilateral abdominal muscles | Normal term | Normal |
| McGoogan, 1932 | First | 3 | 24 | Both lower extremities and right upper extremity | Normal premature (8 mos.) | Premature; died in 48 hours; no deformity |

McGoogan⁹ and need no further comment here. Williams⁶ stated that in women with spinal paraplegias the course of pregnancy is usually uncomplicated, and labor is easy and comparatively painless. Good⁷ found that transection of the spinal cord of a pregnant guinea-pig did not interfere with the normal contraction of the uterus following cesarean section.

There are eight cases of poliomyelitis reported in the literature with satisfactory data concerning pregnancy and labor (table 2). In five, delivery was spontaneous and normal at term. One patient had a premature normal labor. Two had cesarean section performed, one because the mother had an ascending paralysis involving the respiratory muscles. Two of our patients delivered normally, one at term and the other six weeks before term. From these data we feel that uncomplicated poliomyelitis (excluding respiratory paralysis) is not an indication for the interruption of pregnancy and that labor will not be affected adversely.

EFFECT ON THE NEW-BORN

In the literature there are reports of eight infants born of mothers with paralytic poliomyelitis (table 2).

6. Williams, J. W.: Obstetrics, ed. 4, New York, D. Appleton & Co., 1920.

7. Good, F. L.: Pregnancy and Labor Complicated by Diseases and Injuries of the Spinal Cord, J. A. M. A. 83: 416 (Aug. 9) 1924.

finer her to bed for several weeks. The patient had a 4 plus Wassermann reaction of the blood and spinal fluid. The patient died and from the autopsy the following anatomic diagnoses were made: meningovascular syphilis, arteriosclerosis and old poliomyelitis. Potts stated that there is no doubt that the patient had poliomyelitis, but it is known that syphilis may cause atrophic paralysis.

McCarthy⁹ reported a case of a man, aged 32, who had a left clubfoot, atrophy of the muscles of the limbs and contractures of the hands. The mother had been well during her pregnancy. The patient stated that he was born deformed. Autopsy revealed anterior poliomyelitis of the cervical and lumbar segments of the cord and interstitial neuritis following secondary degeneration of the peripheral nerves.

Lamy's¹⁰ case is that of a man, aged 43, with paralysis of the right leg, which he stated was present since infancy. The man died of carcinoma of the intestine. Autopsy revealed a cortical encephalitis of the left side and marked atrophy of the anterior horn cells in the lumbosacral segment of the cord.

8. Potts, C. S.: Intra-Uterine Poliomyelitis, Arch. Neurol. & Psychiat. 21: 268 (Feb.) 1929.

9. McCarthy, D. J.: Report of a Case of Prenatal Poliomyelitis, Rep. Henry Phipps Inst. 5: 437, 1907-1908.

10. Lamy, H.: Sur un cas d'encéphalite corticale et de poliomyélite antérieure associées, Rev. neurol. 2: 313, 1894.

Fritsch¹¹ observed a patient, aged 11 months, who was born by breech delivery without medical assistance. The paralysis of all the extremities was reported present at birth. By careful electrical studies of the involved muscles and in view of the symmetry of the muscle hypoplasia (and cord lesion), Fritsch concluded that the diagnosis was poliomyelitis.

Batten¹² observed his patient for the first time at 2 years of age. The mother had been well during her pregnancy. Delivery was normal and lasted only twenty minutes. Shortly after delivery, the infant fell from the bed to the floor. When examined at 2 years of age, the patient had weakness of the right arm, which, according to the history, was present at birth. There was weakness of both legs, which was noticed at 1 year of age, when the child began to walk. At 8 years of age the child died of diphtheria. Autopsy revealed changes due to poliomyelitis throughout the cord.

None of these cases established intra-uterine infection with certainty. In no instance was poliomyelitis diagnosed in the mother during pregnancy. In the first case (Potts) there was a complicating trauma and a syphilitic infection. The history of paralysis at birth in the first three cases was obtained from the patient when he had attained adult life. Data were not available from the attending obstetrician. Without an autopsy in Fritsch's case, injury to the cord (rapid breech delivery) cannot be ruled out. Batten's patient had poliomyelitis, but the time of onset is not certain.

Poliomyelitis may occur early in life. Lewis¹³ observed an infant who developed symptoms at 9 days of age and paralysis of one leg three days later. The mother had developed paralysis of one leg on the fifth day post partum. Finkelstein¹⁴ mentioned a case occurring in an infant, aged 12 days. Seven cases in infants under 1 month of age were reported in New York City in 1916.¹⁵ The occurrence of poliomyelitis during the first few months of life is not unusual.¹⁶ It is difficult to exclude infection in early infancy in any of the cases in which the disease is diagnosed later in infancy or childhood.

COMMENT AND SUMMARY

Probably poliomyelitis complicating pregnancy is a more frequent occurrence than one would assume from a review of the literature. Only eight cases have been reported. We observed three cases in one year during which time 1,010 patients with poliomyelitis were admitted to the hospital. Fifteen of these were women over 19 years of age. Contrary to the opinions expressed by other observers,⁸ the disease may occur early in pregnancy. As shown in table 2, half of the reported cases occurred during the third month. One of our patients was approximately six weeks pregnant when poliomyelitis developed. The reporting of more cases would help the obstetrician greatly in solving the problems that arise when poliomyelitis occurs. From analogy with other paralytic conditions and from the reported cases of poliomyelitis, it appears that pregnancy and labor will not be affected adversely. In no

instance has a mother in whom poliomyelitis developed during pregnancy transmitted the disease to her offspring.

There are cases reported in the literature in which the mother was essentially well during her pregnancy, and there was paralysis, presumably due to poliomyelitis, present in the new-born. In each of these cases either the data are not sufficiently complete or there is some factor which does not permit the acceptance of intra-uterine infection.

531 East Lincoln Avenue—Foot of East Sixteenth Street.

HYPOPROTEINEMIA PROBABLY DUE TO DEFICIENT FORMATION OF PLASMA PROTEINS

A STUDY OF ONE CASE

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AND

F. H. L. TAYLOR, PH.D.

BOSTON

Attention has been repeatedly called to the association of hypoproteinemia with edema. Recently, Peters and Van Slyke¹ summarized the existing information. Hypoproteinemia has been observed repeatedly as a result of excessive loss of protein, decreased consumption of nitrogenous foodstuffs, and increased protein wastage. We are presenting a case with low plasma proteins and with edema which does not appear to be due to any one of these three causes.

A man, aged 51, Irish born, was admitted to the hospital because of edema of the genitalia and lower extremities. He had been treated for six months at the age of 4 years for "dropsy," which disappeared during that period of observation. For many years there was a slight but constant edema of the feet and ankles. The abdomen had been large since early childhood. Ten years before entry, a brownish discoloration, which was followed by some induration, appeared over the anterior surfaces of the lower legs. The swelling of the feet and ankles increased slowly, extending over the lower legs during the past five years. This swelling did not subside with rest in bed. The swelling extended finally, during the three months before admission, over the thighs and to the genitalia. It gradually became more marked until the time of admission to the hospital.

The family history was noncontributory. The past history was entirely negative except for painful, stiff noninflamed joints, until the age of 20 and the consumption of about 1½ pints of whisky daily for about twenty years, until four years previous to admission.

The patient was observed in the hospital for eleven months, and during this time he was afebrile. The pulse rate and the respiratory rate remained normal. On entry, the weight was 55 Kg.; the height was 162.5 cm. He was in no discomfort, mentally alert, and quite cooperative. The skin over the tibias had a brownish pigmentation and showed a brawny induration. There was considerable tense pitting edema of the feet, legs, thighs and genitalia. There was no clubbing of the fingers. The mucous membranes were of good color. There was no enlargement of the lymph nodes. The bony framework was normal. There were no tender areas in the skull. The pupils were equal and regular and reacted to light and in accommodation. The examination of the fundi revealed no abnormalities. The thyroid gland was barely palpable and revealed no nodules or irregularities. The chest was well formed and symmetrical. The lungs were normal. The heart was not

11. Fritsch: Ein Fall von Poliomyelitis centralis, *Allg. med. Centr.-Ztg.*, 57: 137, 1908.

12. Batten, F. S.: Does Poliomyelitis Occur in Intra-Uterine Life? *Brain* 33: 149, 1910.

13. Lewis, J. M.: Personal communication to the authors. Report of case to be published.

14. Finkelstein, H.: *Lehrbuch der Säuglingskrankheiten*, ed. 3, Berlin, Julius Springer, 1924, p. 137.

15. The Epidemic of Poliomyelitis in New York in 1916, *Monograph of the New York City Health Department*, New York City, 1917.

16. Ohio Department of Health, Columbus, 1929. *Neurol. A.* 42: 142, 1918, quoted in *Poliomyelitis*, Report of the International Committee for the Study of Infantile Paralysis, Baltimore, Williams and Wilkins, 1932. Reference 15.

From the Thorndike Memorial Laboratory, Second and Fourth medical services (Harvard), Boston City Hospital, and the Department of Medicine, Harvard Medical School.

1. Peters, J. P., and Van Slyke, D. D.: *Quantitative Clinical Chemistry: Interpretations*, Baltimore, Williams & Wilkins Company, 1931.

enlarged to percussion, which was confirmed by roentgen examination. The heart sounds were well heard; no murmurs were detected. The pulses were equal, regular, synchronous and of good volume. The systolic blood pressure was 110 mm. of mercury; the diastolic, 70 mm. The abdomen was symmetrically enlarged; the abdominal wall was tense. There was no tenderness or spasm. No dilated veins were seen. No masses nor viscera could be detected. Shifting dullness and fluid wave were absent. Except for edema, the external genitalia were normal. Rectal examination revealed no abnormalities. The neurologic examination was entirely within physiologic limits.

The edema decreased during the first two weeks while the patient rested in bed and the fluid intake was restricted. Slight pitting edema over the tibiae persisted throughout the eleven months of observation and was present at the time of discharge.

The Kahn reaction of the blood was negative.

Examination of the urine was repeatedly negative. No albumin was demonstrated. The phenolsulphonphthalein excretion following intravenous administration was 40 per cent in the first hour and 10 per cent in the second hour. The dilution-concentration test showed a specific gravity range of from 1.014 to 1.024. These studies did not indicate an impairment of renal function.

On entry, the hemoglobin was 90 per cent (Sahli) and the erythrocytes were 4,950,000 per cubic millimeter. There was no significant change in these determinations during the period of observation. The leukocytes varied between 3,900 and 7,450

A roentgen examination following a barium enema revealed only a spastic colon; the arteries of the legs showed deposits of a moderate amount of calcium.

Fasting gastric contents revealed no free acid. After the administration of histamine the gastric juice contained 36.0 units of free acid. The pepsin content of both specimens was normal.

The basal metabolic rate was +9.0 per cent.

Serum calcium and phosphorus were found to be 7.9 mg. and 3.6 mg. per hundred cubic centimeters, respectively, values which are consistent with the lowered plasma proteins. The cholesterol of the blood was in the lower limits of normal, 89 and 96 mg. per hundred cubic centimeters on two occasions, several months apart. Blood chlorides as sodium chloride were within the range of normal, 462 mg. per hundred cubic centimeters. The colloidal osmotic pressure of the serum was found to be 15 cm. of water. The plasma protein, as determined by the Kjeldahl method, on oxalated plasma, was 3.6 Gm. per hundred cubic centimeters, and the albumin-globulin ratio determined by fractional precipitation with a solution of potassium phosphates was 60/40. The ingestion of a diet containing 180 Gm. of protein daily for eight weeks did not alter in the least the plasma proteins or the albumin-globulin ratio. Unfortunately, a determination of the fibrinogen was not made.

Studies of the nitrogen metabolism were also made. The partition of the blood and nonprotein nitrogen of the urine and the nitrogen of the feces were determined when the daily

Values of the Constituents of the Nitrogen Partition of the Blood and Urine

| Date | Total Plasma Protein, Gm. per Cent | Blood, Mg. per Cent | | | | | Urine, 24-Hour Specimen | | | | | | | | | | Protein Intake per Day, Gm. | | |
|-------------------|------------------------------------|---------------------------|---------------------|--------------------|---------------------------|---------------------|-------------------------|------------------|---------------|---------------------------|---------------------|--------------------|------------------|-------|---------|---------|-----------------------------|---------|-----|
| | | Total Creatinine Nitrogen | Amino-Acid Nitrogen | Uric Acid Nitrogen | Grams | | | | | Per Cent Total Nitrogen | | | | | | | | | |
| | | | | | Total Creatinine Nitrogen | Amino-Acid Nitrogen | Uric Acid Nitrogen | Ammonia Nitrogen | Urea Nitrogen | Total Creatinine Nitrogen | Amino-Acid Nitrogen | Uric Acid Nitrogen | Ammonia Nitrogen | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| August 11..... | 3.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 180 |
| September 13..... | 3.3 | 31.2 | 8.83 | 1.51 | 6.51 | 1.04 | 9.640 | 7.600 | 0.372 | 0.403 | 0.135 | 0.603 | 79.50 | 3.87 | 4.20 | 1.40 | 6.28 | 180 | 180 |
| October 24..... | 3.3 | 33.7 | 11.50 | 1.75 | 7.18 | 0.86 | 10.220 | 7.330 | 0.310 | 0.294 | 0.126 | 0.621 | 72.30 | 3.04 | 2.89 | 1.23 | 6.08 | 60 | 60 |
| January 5..... | 3.3 | 34.3 | 10.00 | 2.71 | 7.18 | 0.86 | 8.590 | 6.647 | 0.327 | 0.278 | 0.125 | 0.463 | 77.40 | 3.81 | 3.23 | 1.45 | 5.45 | 60 | 60 |
| January 16..... | 3.9 | 32.6 | 8.30 | 3.40 | 8.14 | 0.73 | 7.430 | 5.320 | 0.339 | 0.302 | 0.018 | 0.289 | 71.60 | 4.83 | 4.07 | 1.05 | 2.89 | 60 | 60 |
| January 30..... | 4.0 | 35.3 | 15.00 | 2.50 | 6.51 | 0.73 | 12.260 | 8.650 | 0.261 | 0.429 | 0.123 | 0.707 | 70.50 | 2.13 | 3.58 | 1.00 | 5.76 | 180 | 180 |
| February 16..... | 3.8 | 33.3 | 20.80 | 2.71 | 7.52 | 0.90 | 9.120 | 6.740 | 0.330 | 0.233 | 0.097 | 0.912 | 74.00 | 3.62 | 2.61 | 1.06 | 10.00 | 180 | 180 |
| Normal range..... | 6-8 | | 9.0-15.0 | 1.4-2.0 | 5.0-6.5 | 0.6-1.0 | | | | | | | | 82-89 | 3.2-6.3 | 1.0-4.5 | 0.8-1.8 | 3.2-5.0 | |

per cubic millimeter. The differential counts were always essentially normal. The sedimentation rate of the red blood cells was abnormally slow, less than 1 mm. per minute.

Studies of liver function were made. The venous blood sugar curve after the administration of 1 Gm. of dextrose per kilogram of body weight showed no abnormal tolerance; the blood sugar attained a maximum of 153 mg. per hundred cubic centimeters in thirty minutes from a fasting level of 78 mg. and a minimum of 70 mg. in two hours. Similar studies with levulose, 1 Gm. for each 1.5 Kg. of body weight, revealed a rise of 40 mg. from a fasting level of 73 mg. per hundred cubic centimeters; this pointed toward a decreased tolerance, as a rise of 30 mg. from the fasting level is considered to be the maximum normal rise. A similar decrease in tolerance for galactose following the ingestion of 40 Gm. was indicated by the urinary excretion of 4 Gm. in the five-hour period; the maximum normal excretion expected is 3 Gm. As is to be expected normally, there was no retention of bromsulphalein thirty minutes after intravenous injection. The icteric index was 2, which is abnormally low and suggests that pigment formation is impaired. Likewise, the bilirubin was less than 1 mg. per hundred cubic centimeters.

Amyloid disease was not indicated by the removal of only 29 per cent of congo red from the serum in one hour.

The investigation of the cardiovascular system revealed normal blood gases, and the circulation time and the cardiac output were within the limits of normal.

Serologic and chemical studies of the cerebrospinal fluid gave normal results. The total proteins were 11 mg. per hundred cubic centimeters; the chlorides were 702 mg. per hundred centimeters as sodium chloride.

diet contained 60 Gm. of protein and again when the protein intake was 180 Gm. daily. During the period of the 60 Gm. protein intake, pepsin, 10 Gm. daily for a period of six weeks and later trypsin, in similar amounts for two weeks, were given without producing any significant alteration in the nitrogen metabolism. The stools showed no measurable increase in nitrogen between the low and the high protein diet. The loss of nitrogen in the stools was not more than from 1 to 2 Gm. a day.

The accompanying table gives the values for the various constituents of the nitrogen partition of the blood and urine. The values termed the normal range indicate the limits of variation obtained by the methods employed in this investigation.

The amino-acid nitrogen of the blood varied between 6.51 and 8.14 mg. per hundred cubic centimeters, remaining above the normal level constantly. The urinary ammonia nitrogen likewise remained elevated, varying between 6.28 and 10.0 per hundred cubic centimeters of the total nonprotein nitrogen. The changes in the remaining nitrogen partitions of the blood and urine were such as would be expected to follow a high and low protein diet.

During the entire period of observation, the plasma proteins varied between 3.4 and 4.0 Gm. per hundred cubic centimeters, considerably below the normal level. The protein deficiency was proportionately distributed between the albumin and the globulin fractions.

COMMENT

It appears that the patient had no difficulty in the digestion and absorption of protein, as evidenced by his urinary and fecal nitrogen excretion and by the effect of changes in diet as reflected in the nonprotein

nitrogen partition of the blood. There is no evidence suggestive of renal disease or of increased protein wastage.

This degree of hypoproteinemia with a normal albumin-globulin relationship is unusual. Such inorganic constituents as have been determined in the patient, chlorides, calcium and phosphorus, do not indicate an alteration in the inorganic constituents of the blood. The cholesterol values are in the lower range of normal. The essential abnormality seems to be in the mechanism of synthesis of plasma proteins. This is emphasized by the failure of protein feeding to influence the level of the plasma proteins.

The origin of the plasma proteins is poorly understood. The weight of the evidence at hand indicates that fibrinogen is formed in the liver and that the liver, intestinal wall and the blood-forming organs are probable sites of origin for other plasma proteins.² It is of interest to note that in this patient a disturbance in liver function is suggested by the somewhat decreased galactose and levulose tolerances and by the elevated blood amino-acid nitrogen. It is conceivable that the defective formation of plasma proteins here is due to altered liver function.

SUMMARY

The hypoproteinemia in a patient with chronic edema, low plasma proteins and reduced colloid osmotic pressure was uninfluenced by protein feeding. The observations made seem to indicate a deficiency in the formation of plasma proteins.

ERYTHREMIA

A THERAPEUTIC SUGGESTION

ROGER S. MORRIS, M.D.

CINCINNATI

Erythremia (polycythemia vera) is generally considered a primary disease of the hematopoietic system, of unknown etiology. Despite the great increase in the number of the erythrocytes in this disease, immature cells in the peripheral blood present evidence of increased activity of the bone marrow, an appearance usually associated with anemia. The occurrence of polychromatophilia, of normoblasts and of myelocytes in the blood cannot be explained satisfactorily in any other way.

Studies have shown that the stomach of man and of dogs secretes a substance which may be recovered in a form suitable for intramuscular injection and which is a powerful stimulant of marrow activity in pernicious anemia.¹ From the stomach contents of swine and cattle, obtained immediately after slaughtering, a similar, probably identical, substance has been obtained. This substance is dialyzable through collodion and withstands esterification, properties that would seem to remove it from the enzymes. It is probably a hormone, for which the name "addisin" has been proposed.

As pernicious anemia appears to be due to a lack of secretion of addisin, it seemed theoretically possible that erythremia may be the result of hypersecretion of addisin or of hypersusceptibility of the marrow to

it.² A similar hormone theory has been advanced by Hurst³ and by Tuchfeld,⁴ independently.

In a patient with erythremia, having 8.9 million red cells, addisin derived from 1,250 cc. of the gastric contents of swine was injected intramuscularly. On the fifth day following the injection, the reticulocytes, which had been in the neighborhood of 1 per cent, rose to 2.5 per cent, or from 89,000 to 212,000 per cubic millimeter. Coincident with this reaction, an occasional normoblast was found in the blood and erythrocytes containing minute nuclear particles, which were absent or nearly so (270 per cubic millimeter), rose to a maximum of 14,700 per cubic millimeter on the sixth day, followed by a rapid fall. On the ninth day after the injection, a differential count showed 1 per cent myelocytes. These results indicate clearly a response of the bone marrow to stimulation by addisin, despite the polycythemia.

Another fact in support of this theory was presented by the same patient. He had suffered from duodenal ulcer and, on advice of his physician, he passed a

A Comparison of Erythremia and Pernicious Anemia in Relapse

| | Erythremia | Pernicious Anemia |
|-----------------------------|--|---------------------------|
| Bone marrow..... | Normoblastic | Megaloblastic |
| Color index..... | -1 | +1 |
| Red cells | | |
| (a) Number..... | Polycythemia | Anemia |
| (b) Production..... | Increased | Decreased |
| (c) Maturation..... | Normal | Defective |
| (d) Polychromatophilia..... | + or - | + or - |
| (e) Nucleated..... | Normoblasts | Megaloblasts, normoblasts |
| (f) Diameter..... | - or normal | + |
| (g) Volume..... | - or normal | + |
| White cells | | |
| (a) Number..... | + or normal | Leukopenia |
| (b) Neutrophils..... | + | + |
| (c) Myelocytes..... | + or - | + or - |
| Platelets, number..... | + or normal | + |
| Blood serum, bilirubin..... | Normal, rarely + | + |
| Achylia gastrica..... | -, rarely + | + |
| Urine, urobilin..... | Normal, rarely + | + |
| Skin, color..... | Cyanosis | Pallor, lemon yellow |
| Mucous membranes..... | Red cyanosis | Pallor |
| Splenomegaly..... | + or - | - or + |
| Familial..... | - or + | - or + |
| Treatment..... | Remove addisin or lessen its secretion | Supply addisin |

stomach tube and washed his stomach three or four evenings a week for a period of six months. During this time, without other treatment, the red cells decreased steadily from 10.0 to 5.3 million. The lavage was then discontinued, and the count gradually increased to 10.2 million at the end of five months. It seems quite possible that the improvement noted was due to mechanical removal of an appreciable quantity of addisin with a corresponding decrease in stimulation of the bone marrow.

Examination of the sources of hematopoietic substances effective in pernicious anemia discloses a high purine content (liver, kidney, stomach, nucleic acid). Should the diseases pernicious anemia and erythremia represent in reality an addisinism and hyperaddisinism, as seems theoretically possible (like myxedema and hyperthyroidism, for example), there would seem to be the possibility of controlling erythremia by means of dietary measures. For this purpose, a low purine diet continued over a long period of time, with careful study of the blood, is suggested.

As erythremia is a comparatively rare disease, this suggested treatment cannot be observed in any one clinic

2. Howe, P. E.: The Function of the Plasma Proteins, *Physiol. Rev.* 5: 439 (Oct.) 1925. Wiener, H. J., and Wiener, R. E.: Plasma Proteins, *Arch. Int. Med.* 46: 236 (Aug.) 1930.

From the Department of Internal Medicine, University of Cincinnati College of Medicine, and the Medical Clinic, Cincinnati General Hospital.

1. Morris, R. S.; Schiff, Leon; Foulger, J. H.; Rich, M. L., and Sherman, J. E.: Treatment of Pernicious Anemia, *J. A. M. A.* 100: 171 (Jan. 21) 1933.

2. Morris, R. S.; Schiff, Leon, and Foulger, Margaret: *J. Med.* 13: 313 (Aug.) 1932.

3. Hurst, A. F.: *Guy's Hosp. Rep.* 76: 287 (July) 1926.

4. Tuchfeld, Fritz: *Med. Klin.* 27: 130 (Jan. 23) 1931.

in a sufficiently large number of patients to be of value. I have started one patient on this diet and have suggested its trial in two others. This note is published in the hope that the plan may appeal to others as worthy of trial, so that evidence pro or con may be accumulated.

TUBERCULOUS FISTULA IN ANO

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CHICAGO

For years it has been taught by various clinicians and writers on tuberculosis that a tuberculous fistula should not be operated on, that, after operation, it is more apt than not to recur, and that if it remains healed the pulmonary disease, if latent, is often activated and, if active, is frequently made worse. Although proctologists for a number of years have operated on tuberculous anal fistulas and obtained favorable results, the beliefs enumerated are widely held and perpetuated in recent publications. It is the repetition of traditional error. One might almost suspect some of the ideas of having survived the era of the humeral theory, when it was feared to stop a discharge in one place lest this dam back the humors, which would break out anew elsewhere.

Tuberculous fistulas will heal after adequate operation if reasonable care is given to the pulmonary disease. For several years I have been performing fistulectomy on patients having tuberculosis, in many cases even in the advanced stages. The removal of a suppurative focus benefits the patient; this is especially true if the area of suppuration is fairly large, as it often is in these patients. Toxemia is reduced and the patient is made more comfortable and rests better. The importance of the elimination of an area of suppuration in an already handicapped patient needs no emphasis. And, if brief, fistulectomy carries out one of the cardinal tenets of present day therapy in the disease; i. e., the elimination of tuberculous or nontuberculous complications to focus healing ability on the pulmonary lesion.

These convictions have been reached over a period of several years while I was caring for patients at the Chicago Municipal Tuberculosis Sanitarium. Recently, a study was made of seventy-five fistulectomies which I have performed in the last five years. Some of the facts brought out in this investigation are of interest.

AGE AND SEX

The ages of the patients ranged from 13 to 74 years. The greatest incidence was in patients aged from 20 to 40 years; the next highest incidence was in the following decade. Only four were under 20 years of age. The age incidence approximated that of pulmonary tuberculosis. There were twenty-two women and fifty-three men, 30 and 70 per cent, respectively. The greater incidence in males is common in fistula in ano of any type; nontuberculous fistula is much more common in males.

PULMONARY DISEASE

All the patients had pulmonary tuberculosis and with two exceptions such disease was active. On admission, twenty-eight were classified moderately advanced B cases and twenty-six far advanced B cases; twenty-one

fell among the other classifications. On discharge, the classification was more diverse; more patients were included in the moderately advanced A and B groups and in the far advanced A and B groups, and seven were classified as far advanced C cases, although no cases in the C group were admitted.

TYPE OF PATIENTS

The patients admitted to the sanatorium are not chiefly the ones with old chronic fibroid lesions. The pulmonary types are a mixture of the exudative and proliferative disease and not the progressive chronic proliferative type chiefly seen in custodial institutions. The former are the types seen in active practice, requiring active therapy or requiring care in sanatoriums conducted on a modern treatment basis. Admission to the sanatorium is based chiefly on the tuberculous lesion being sufficiently limited or early, so that improvement or an arrested process is possible with well regulated institutional care. In a word, the majority of the patients are of the sort seen in general practice.

LENGTH OF TIME IN SANATORIUM

The yearly admission is about 2,000 and the average enrolment is 1,225. The average stay in the hospital varies from year to year; in the last five years it has varied from 344.1 days to 276.6 days. One third of the seventy-five fistulectomy cases were hospitalized less than a year. The time at the sanatorium of the whole group varied from 60 to 874 days, the average being 252 days.

DURATION OF FISTULA

Sixty-three patients (84 per cent) had pulmonary tuberculosis from a few weeks to thirteen years before the fistula occurred; ten patients (13.3 per cent) had the fistula before a diagnosis of pulmonary tuberculosis was made. It had existed in these cases from twenty-one years to two months: One had the fistula twenty-one years; one, six years; one, five years; two, four years; one, three years; one, one year; two, six months, and one, two months. Tuberculous granulation tissue was not found in any fistula over five years old. Whether the process was originally tuberculous cannot be determined. Of two four year old fistulas, one was tuberculous, the other not; a three year fistula was tuberculous, as was one a year old; two six months old fistulas were nontuberculous, and one two months old was tuberculous. Much has been written about primary tuberculous anal fistula. With such variation in duration and type in our cases, generalizations are of little moment. It is rare in our experience.

PATHOLOGIC STUDIES

A diagnosis of tuberculous fistula is based on the finding of tuberculous granulation tissue on microscopic examination. Fifty-six per cent of the cases in this series showed such tissue on the usual pathologic examination; a further investigation was made of tissue from the last nineteen fistulectomies performed in 1932. Between 200 and 300 sections were made serially of each specimen and all examined for characteristic granulation tissue. Two cases (16 per cent) previously reported negative were found to present tuberculous tissue. If this average prevailed in the preceding four years, and such an assumption is reasonable, the total incidence of tuberculous fistula in patients having pulmonary tuberculosis in our series is 72 per cent.

The tissue submitted to the laboratory is not the fibrous wall of the collapsed abscess cavity or infected

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tract but the gelatinous granulation tissue that lines the cavities or tracts. Giant cells, tubercles and other characteristic structures are found in this tissue when the fibrous wall shows nothing significant. After the fistula has been opened, these granulations are simply scraped out with knife or gauze and placed at once in physiologic solution of sodium chloride and sent to the laboratory. Care in providing the pathologist with live granulation tissue is important; however, this cannot always be done, for in some tracts there is even very little necrotic granulation tissue to be obtained. In two cases, clinically tuberculous, only repeated laboratory investigations demonstrated tuberculous tissue.

THE PATHOLOGIC DIAGNOSIS OF RECTAL FISTULAS

H. C. Sweaney says:

The diagnosis of tuberculosis in fistulas of the anus and rectum depends entirely on the histopathological findings, because the gross, the clinical, and the bacteriological findings are indefinite or of no value. The histopathological diagnosis depends upon the time honored presence of tuberculous granulation tissue [fibroblasts, capillaries, fibrin, lymphocytes, etc.] with the Langhans type of giant cell; characteristic tubercle formation with necrotic center; fibroblastic capsule and mononuclear and lymphocytic infiltration.

Inasmuch as the microscopic diagnosis of tissue from rectal fistulas in our institution has run less than 60 per cent positive for tuberculosis in the last five years [exclusive of 1932] it is pertinent to make an inquiry into the causes of such low findings, especially since the great majority are considered to be, and most likely are tuberculous. It must not be inferred from this, however, that all anal fistulas are tuberculous. There is no reason why other infectious agents may not cause ulcers in this region.

Like most analytical procedures the problem may be considered from the standpoint of the sampling, and the examination.

The "sampling" or taking of specimens, depends upon the individual clinician and the character of the fistula. He may take only a small tag of tissue or dissect out the entire tract. In the complete dissection only superficial tissue may be removed or the entire layer of granulation tissue may be taken. In removing sloughs or tags of tissue there is the greatest likelihood of error, and as I review our sections, it is this type in which we have had most of our negative findings. The tissue is usually necrotic with nothing left but the original stroma outlining the intestinal glands at one end of the tract and a few extinct capillaries in the old granulation tissue. The staining is usually a pale blue, showing that there is only acid-bearing tissue present. Even the usual pink of tuberculous caseation is absent. Here one may find the hull of an old giant cell and characteristic granulation tissue, but frequently the disintegrating intestinal glands will resemble a giant cell, so it is risky to make a diagnosis in such findings even though one may have the feeling that it is tuberculous. In such tissue there would be little gained in making serial sections, because the tissue is uniformly necrotic. It is always advantageous to take some live granulation tissue for section or remove the whole ulcer, in which cases the burden falls on the pathologist. Where there has been live granulation, the diagnosis has usually been easy in our routine examination, which consists in the mounting of 3-6 paraffin sections taken at intervals. In negative cases, especially where the tissue is suspicious, complete serial sections are indicated.

Apart from the sampling and the conditions just referred to, however, there are times when the findings—either negative or positive—may not be accurate.

On the one hand, granulation tissue of any chronic nature, may simulate tuberculosis. Even the giant cells may be found. Syphilis is one of several such chronic granulomas. The giant cell is a foreign body reaction—a reaction against an indigestible substance whether it is wax, wood, caseum, cholesterol or other such inert material. As some such substances may be present, there is always the possibility, although rarely, of confusing them with tuberculosis. There are, however, peculiar

characteristics of the giant cells of tuberculosis that are rather definite—their fullness, the pink centers, the vigorous cells arranged in a semicircle, etc.

On the other hand there may be tuberculous fistulas and ulcers that do not reveal a single giant cell even on serial section. Whether this is due to the type of bacillus, to the reaction of the host, or to an overgrowth of secondary organisms, is problematical. There is no doubt but secondary overgrowth will change the picture to a marked degree. I have serially sectioned ulcers that have only shown the characteristics of subacute abscess that were undoubtedly tuberculous, because the gross characteristics, the surrounding ulcers, and all other factors were typically tuberculous. I have seen hyperplastic tubercles showing only fibroblasts, monocytes, etc., without any giant cells at all. To make a diagnosis, however, on characteristic granulation tissue alone is risky, because I have seen chronic infections with Friedländer's bacillus simulate tuberculous granulation tissue, except there were no giant cells.

With careful, repeated, or complete sampling, with serial sections, and with careful study, however, over 75 per cent in tuberculous patients should be found tuberculous. No doubt, all but an insignificant minority are tuberculous.

INCIDENCE OF TUBERCULOUS FISTULA

Seven per cent of the patients at the Municipal Tuberculosis Sanitarium have anal fistula. Only a very small number of the anal fistulas in my private practice are demonstrably tuberculous. The number varies from year to year, but from 3 to 5 per cent is the maximum. Consequently, I cannot think that an anal fistula is a common indication of pulmonary tuberculosis. Most of the anal fistulas in the tuberculous patients are tuberculous, but very few of all anal fistulas are tuberculous in this portion of the United States. However, Miles reported two years ago that about 14 per cent of anal fistulas are tuberculous.¹ The material of some foreign authors probably differs from ours and justifies other conclusions. There is no excuse for foregoing a careful chest examination of the patient having a fistula, even if the incidence here is relatively low. Error is possible even after careful investigation, as has been shown. It is courted in the exceptional case; that is, in from 3 to 5 per cent if physical examination is indifferent or incomplete. Medico-actuarial statistics show that a sufficient number of patients who have or have had anal fistula do develop pulmonary tuberculosis to compel insurance companies to inquire carefully into the character of fistula in their clients, especially if they are 15 per cent or more underweight.² Although not many of all fistulas are tuberculous, the relatively high incidence of it in the tuberculous must be considered.

Symptoms depend on the extent and character of the infected tract. If it is short and rather superficial, a thin purulent discharge only may be present. When it is larger and deeper and more tissue is involved, toxemia, local discomfort or soreness, and a free purulent discharge may exist. When the external orifice becomes blocked, pain and swelling develop. In a blind internal fistula (internal sinus) this occurs when the internal orifice is blocked. Some fairly large or large and deep tuberculous abscesses develop without much pain, but it seems to me that the painlessness of perianal and perirectal suppuration in the tuberculous patient has been overemphasized. They are generally painful in my experience.

The diagnosis is important before an effective operation can be done. An anal fistula usually arises from a

1. Miles, W. E.: *Anorectal Fistulas: Their Classification, Pathology and Treatment*, Practitioner, 126: 501-536 (May) 1931.
2. Fansler, W. A.: *The Relationship of Tuberculosis to Fistula in Ano*, J. A. M. A. 85: 671 (Aug. 29) 1925.

crypt infection. The crypt becomes infected, the inflammatory process extends through the bowel wall and an abscess forms. This may rupture within the bowel or on the skin, or the abscess may be incised through the skin. Thus an infected tract is left: a complete fistula with both internal and external openings, a blind internal fistula (more accurately a perianal or internal sinus) with only an internal orifice or a blind external fistula (external sinus) with only an external orifice. Fistula may, rarely, follow trauma, e. g., a kick or fall on the buttocks, and a subcutaneous fistula may develop from a thrombotic external hemorrhoid; a tuberculous coccyx or sacrum may cause a perianal fistula, or it may arise from a stricture a few inches up in the rectum. A periprostic or suburethral abscess may drain through the perineum. But the primary infection in the vast majority of cases is in a crypt, at the junction of the skin with the mucosa; the pathologic sequence is that already stated. This deserves emphasis and it is of great importance to keep this in mind when looking for the internal opening. Success depends on laying open the whole infected tract or tracts, particularly the internal orifice. The latter is nearly always in a crypt. A flexible silver probe, made by "beading" 19 and 21 gage silver wire by holding the ends a moment in the flame of a Bunsen burner, is very satisfactory for exploring the fistula. If the internal orifice cannot be found with this, one of the dyes, gentian violet or methylene blue, may be used. I prefer bismuth paste, 1 part of bismuth subnitrate to 2 parts of petrolatum (Beck's paste), as it is cleaner and just as effective. In a few instances it is helpful to inject the tract with iodized poppy-seed oil or bismuth paste and have a roentgenogram made. This procedure is overdone: it is only rarely helpful or necessary. If the examination is painful, it is advisable to wait at times until the patient has been given a local anesthetic before the diagnosis is completed; in this case, fistulectomy is done under the same anesthesia. In any event, an accurate diagnosis is essential before operation.

CHARACTERISTICS OF TUBERCULOUS FISTULA

A fistula is considered grossly tuberculous when the skin orifice is large or gaping, the edges are undermined and cyanotic and the tract is much more patulous, "eaten out," than in the ordinary type.

INDICATIONS FOR OPERATION

Some small anal fistulas give very little trouble to the patient and may be safely left alone. It is not my experience that any great number heal spontaneously, as some hold, but a small fistula does not demand operation. I see relatively few of these. Most of my patients have a fistula of moderate size, a fair proportion of large size, and these are causing pain or discomfort. Most of them contain enough pus to act as a serious focus of infection.

Certainly a fistulectomy is merely an incident in the management of the pulmonary disease. In some terminal cases the patients are made much more comfortable by the operation. It may be inadvisable for a time, in a moderately advanced case, because of the activity of the disease in the lungs or elsewhere. Decision is based on a consideration of all the aspects of the case. Briefly, a perianal abscess requires incision and drainage as soon as it is diagnosed. The opening is kept patent by swabbing the tract daily or two or three times a week. Adequate drainage is maintained and thus the formation of new tracts is avoided. Some cases heal without further treatment. Fistulectomy is

performed when the infected tract persists and when the patient's condition permits. In Fansler's³ series of 101 cases, 90 per cent healed after fistulectomy, whereas 65 per cent of the patients not operated on (twenty-three cases) were unimproved or died.

ANESTHESIA

In most cases the injection of 35 cc. of a 1 per cent solution of procaine hydrochloride in the sacral canal and 10 cc. in each second sacral foramen is used. In the unusual instance in which this did not afford complete anesthesia, the third or fourth or both foramina on the incompletely anesthetized side were injected. Caudal block and some perianal infiltration with a 0.5 per cent solution of procaine hydrochloride was done in cases in which the time could not be taken with the procedure described. Fifteen patients were given a low spinal analgesia, 50 mg. of procaine crystals dissolved in cerebrospinal fluid or 1 cc. of a proprietary procaine mixture being used. I prefer the transsacral and caudal anesthesia in this work, but there were no unfavorable reactions with the spinal analgesia; they are not to be expected with the small amount of drug used.

Sodium amytal, $1\frac{1}{2}$ grains (0.1 Gm.), is given the night before operation, 3 grains (0.2 Gm.), one and a half hours preoperatively and one-sixth grain (0.01 Gm.) of morphine sulphate fifteen minutes preoperatively.

OPERATION

A barium or bismuth paste was frequently although not usually injected through the external orifice to identify the tract and internal orifice. Often this is not necessary. Filiform bougies or flexible wire probes, gage 19 to 21, may suffice. Accurate identification of the internal orifice is essential; the fistula will recur or, what more often happens in these cases, the wound will not entirely heal if the internal orifice remains. If there is no internal opening, that is, if the fistula is incomplete, only confusion, if nothing worse, is caused by making one. This can readily be done with the stiff wire probes used by many surgeons and found in many hospitals. There is no advantage in cutting the sphincter and to incise a normal crypt, even when the tract seems to end at this crypt. But in some cases the internal orifice has healed or inflammation has extended through the bowel wall at this crypt site. If there is a nodule of scar tissue in the crypt or the crypt is obviously deformed from previous inflammation, the incision should be extended through the sphincter to the crypt and the crypt excised. Chronically inflamed tissue at the upper extremity of a fistulectomy wound will delay or prevent healing in tuberculous cases.

When this work was started five years ago, the cautery was used as a routine. The thought was that the lymphatic and in back of this the fibrous tissue reaction was the barrier to the extension of tuberculosis here as elsewhere and that the knife would open up new channels for extension of the infection. Comparing results of operation by the two methods, scalpel or cautery, better results were had in the former. The radio knife was used in some cases. In the last three years the ordinary knife or scissors have been used; dissection is accurate and the wound heals satisfactorily afterward.

After the tract and its lateral extensions, if present, have been opened, it is wiped out with gauze to clean out debris and granulations; when the latter are quite adherent, they are cleaned off the fibrous tissue with the

scalpel. Overhanging skin edges are trimmed off, "unroofed" to provide for adequate drainage by converting the tract into a V shaped gutter. Hemostasis is secured and iodoform gauze is placed in the wound. Not all fistulas have a firm fibrous tissue wall; if they do, the wall is not scarified as in the usual fistulectomy; if they do not, care is taken to avoid undue traumatization of the tract when it is cleaned out.

If the orifices are eliminated and the tract is well and completely opened and given proper postoperative care, these wounds heal. Even if the fistulas are multiple and the tracts tortuous and extensive, as a number of these were, healing occurs.

RATE OF HEALING

Some wounds are completely healed in from two to three weeks. These are usually nontuberculous tracts or appear in patients with lung disease which is not very active. The wounds ordinarily heal slowly. The average rate is several times as long as in a nontuberculous patient. The majority of wounds are healed in four months, a number are not entirely healed before six months, and a few for a longer period. One coincident with pulmonary disease which was very active for a time healed slowly over a period of a year and a half. These wounds cannot be expected to heal as readily as a wound in a healthy subject; the patients have an exhausting disease; the reparative power of the tissue is less than normal. If one is certain that the operation has been adequately done, a complete repair may be confidently anticipated. Patients in the terminal stages are excepted. Ten patients died before their wounds were entirely healed, but except in two of these, wound healing was progressive, although the pulmonary disease was advancing. In eight cases healing was well advanced at the time of death. The wounds healed completely in 87 per cent of our cases.

POSTOPERATIVE REACTION

Sixteen patients (20.1 per cent) were made temporarily worse by the operation; that is, there were increased pulse rate, increased fever or the occurrence of fever in a previously afebrile patient, increased pulmonary disorder or other evidences of an unfavorable reaction, for periods of from a few days to two weeks. Very few had a marked reaction and these were practically all in large fistulas in advanced cases. Even in this group, the permanent results are good. No patient was made permanently worse by fistulectomy.

GAIN IN WEIGHT

No marked gain in weight occurs in some cases, but a gradual improvement generally follows. A gain of from 5 to 10 pounds (2.3 to 4.5 Kg.) was made in the majority within a six month period after operation; eight gained 15 pounds (6.8 Kg.), and four, 20 pounds (9 Kg.) in this time.

RESULTS OF OPERATION

It is a striking fact that the patient is usually made definitely more comfortable by the operation. The general improvement noted is undoubtedly due to (1) elimination of a focus of suppuration, and (2) increased relaxation and rest by the removal of a source of irritation or pain.

CONCLUSIONS

1. Because of a traditional belief that they should not be operated on, anal fistulas in tuberculous patients are often neglected.

2. In this series, 56 per cent of anal fistulas in fifty-five patients having pulmonary tuberculosis were proved tuberculous; 72 per cent of twenty cases in 1932 were proved tuberculous, by more detailed investigation. That something more than 72 per cent are tuberculous is probable. Seven per cent of all pulmonary tuberculosis cases at the Municipal Tuberculosis Sanitarium presented anal fistulas. Relatively few cases of anal fistula are tuberculous.

3. The diagnosis of tuberculosis in fistula of the anus and rectum in patients with pulmonary tuberculosis depends entirely on the histopathologic examination because the gross, the clinical and the bacteriologic results are indefinite or of no value.

4. In 87 per cent of the patients with pulmonary tuberculosis on whom anal fistulectomy was performed, healing was complete; the remaining 13 per cent were far advanced cases; despite this fact, healing was progressing in 10.4 per cent of these up to the time of death. This does not confirm the claim that these wounds do not heal satisfactorily.

5. In the tuberculous patient, a perianal abscess should be incised as soon as it is diagnosed. Drainage of the infected area must be maintained. If a sinus or fistula persists, it should be operated on as soon as the general condition permits.

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OCCURRENCE OF THE BORDET-GENGOU BACILLUS

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In continuation of previous investigations¹ issued from the Danish State Serum Institute, I have carried out some systematic studies on the occurrence of the Bordet-Gengou bacillus.

Since 1916, this institute has employed the coughing-plate method introduced by Adolph H. Meyer for the bacteriologic diagnosis of whooping cough, and in Denmark this method is being used more and more.

Previously the results from a total of 2,811 suitable specimens have been compiled. In addition, I have examined 1,086 suitable specimens at the State Serum Institute during the period from Sept. 1, 1930, to March 1, 1931. All told, the material consists of 3,897 specimens, 2,144 of which came from pertussis patients. The results from these 2,144 examinations are given in table 1.

From the material of the serum institute it is difficult to say anything definite as to the occurrence of the Bordet-Gengou bacillus in the later stages of whooping cough because it is relatively seldom that specimens come from patients in these stages and also because it cannot with certainty be taken for granted that the data on the information of the stage of the disease in these cases are altogether correct. For these reasons, I have made a systematic examination on 109 children

From the State Serum Institute, Thorvald Madsen, M.D., Director.
1. These include:
Chievitz, J., and Meyer, A. H.: Arch. f. Kinderh. **64**: 321, 1915;
66: 186, 1915; Ann. de l'Inst. Pasteur **29**: 503, 1916; Communicat. de l'Inst. sérothér. de l'état Danois **9**: 151, 1917; München. med. Wchnschr. **65**: 729, 1918.
Kristensen, Martin: Communicat. de l'Inst. sérothér. de l'état Danois **17**: 199, 1927; Compt. rend. Soc. de biol. **96**: 355 (Feb. 11) 1927;
Brit. M. J. **2**: 663 (Oct. 9) 1926.
Madsen, Thorvald: Boston M. & S. J. **192**: 50 (Jan. 8) 1925; Revue franç. de pédiat. **5**: 145 (April) 1929.
Meyer, A. H.: Communicat. de l'Inst. sérothér. de l'état Danois **11**, 1921; Compt. rend. Soc. de biol. **84**: 425, 1921.

who had whooping cough, letting them cough on a plate of Bordet-Gengou medium from two to three times a week for a considerable length of time. When the coughing ceased, I employed the following method for making cultures: With a sterile probe, bent to an angle of 130 degrees, I tried to obtain some secretion from as far down in the larynx as possible, taking precautions at the same time not to touch the mucous

TABLE 1.—Results from Examination of 2,144 Pertussis Patients

| | Number of Pertussis Patients | Number of Patients with Bordet-Gengou Bacillus | Frequency of Positive Bacillary Results |
|-------------------------------------|------------------------------|--|---|
| Catarrhal stage..... | 378 | 247 | 65.3% |
| Convulsive stage, 1st week..... | 887 | 486 | 54.8% |
| Convulsive stage, 2d week..... | 441 | 231 | 52.4% |
| Convulsive stage, 3d week..... | 210 | 84 | 40.0% |
| Convulsive stage, 4th week..... | 104 | 35 | 33.7% |
| Convulsive stage after 4th week.... | 174 | 13 | 7.5% |

membranes of the mouth and fauces. In every case, cultures were made from the posterior wall of the pharynx before inoculation from the larynx was undertaken. It was only in a few cases that cultures from the pharynx turned out to be positive. The material obtained with each probe was used for smear cultures in at least two dishes of the pertussis medium employed by the institute.

After practicing this technic for some time, I almost always succeeded in obtaining suitable smear cultures, which allowed an examination of the same number of isolated colonies as are usually found on a plate inoculated by coughing. Control tests showed that the presence of Bordet-Gengou bacilli can be demonstrated just about as often by cultivation from the larynx as with the cough-plate method.

The results obtained in the systematic examinations of these 109 children are given in table 2.

TABLE 2.—Results of Systemic Examination of One Hundred and Nine Children *

| | Number of Examinations | Number of Positive Results | Frequency of Positive Results, per Cent |
|-----------------------------------|------------------------|----------------------------|---|
| Convulsive stage, 1st week..... | 68 | 43 | 63.2 |
| Convulsive stage, 2d week..... | 65 | 22 | 33.8 |
| Convulsive stage, 3d week..... | 89 | 16 | 18.0 |
| Convulsive stage, 4th week..... | 93 | 4 | 4.3 |
| Convulsive stage, 5th week..... | 95 | 4 | 4.2 |
| Convulsive stage, 6th week..... | 72 | 0 | 0 |
| ..... | 57 | 1 | 1.8 |
| ..... | 52 | 1 | 1.9 |
| ..... | 22 | 0 | 0 |
| ..... | 20 | 1 | 5 |
| Convulsive stage, 11th week..... | 13 | 0 | 0 |
| Convulsive stage, 12th week..... | 7 | 0 | 0 |
| Convulsive stage, after 12th week | 22 | 0 | 0 |

* Total number of examinations, 675 on 109 children; that is, on an average, 6 examinations on each child.

As the children were examined more than once in the same week, the frequency of positive cultures is somewhat greater in proportion to the number of children than in proportion to the number of examinations (table 3).

If the data in regard to the 3,897 plates examined at the serum institute by different observers since the procedure was initiated are collected, a curve of the duration of carriage of the organism could be drawn. However, such a curve would be unreliable because too few examinations were made after the fourth week and

because the examinations were made by different observers.

I have therefore constructed a curve based on my own material, which consists of the examinations on the 109 children previously referred to and on the 1,086 samples examined by me in the diagnosis station.

In Denmark, pertussis patients are quarantined during the first four weeks of the convulsive stage.

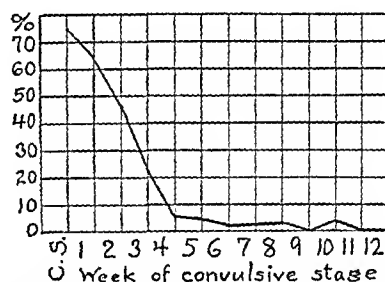
From my bacteriologic studies it is to be expected that infection may be transmitted from the patients late in the course of the disease. Still, it is a question whether this actually happens often enough to extend the quarantine. To elucidate this question, I have gathered the practical experiences of the past fifteen years in Denmark concerning the infectivity of whooping cough after the fourth week of the convulsive

TABLE 3.—Percentage of Positive Results by Weeks

| | |
|---|------|
| In the 5th week B.-G. bacilli were found in 4 out of 57 children | 7.0% |
| In the 6th week B.-G. bacilli were found in 0 out of 47 children | 0% |
| In the 7th week B.-G. bacilli were found in 1 out of 33 children | 3.0% |
| In the 8th week B.-G. bacilli were found in 1 out of 30 children | 3.3% |
| In the 9th week B.-G. bacilli were found in 0 out of 13 children | 0% |
| In the 10th week B.-G. bacilli were found in 1 out of 11 children | 9.1% |

stage. It turns out to be a very rare occurrence in schools, hospitals, nurseries, asylums or any institution that a pertussis patient communicates the infection after the quarantine is discontinued.

The question whether there are chronic carriers of whooping cough has not been investigated before on a scale sufficient to allow of any conclusions. No comprehensive systematic investigation into this question has been published before, and those few reports of the finding of the Bordet-Gengou bacillus in persons who have no whooping cough have all been rather doubtful. Therefore, I have examined 500 healthy



Relation between stage of the disease and percentage of positive results. C.S., catarrhal stage.

persons who did not cough and who had not been in contact with any pertussis patients in the infectious stage; these examinations were made with cultures from the pharynx and from the larynx. In addition, I have examined 301 persons who have lived in contact with infectious pertussis patients for at least one week; these examinations were made with the cough-plate method combined with pharynx and larynx cultures. I have further examined 30 patients with pharyngeal diphtheria, 12 patients with croup, 11 patients with pseudocroup, 22 patients with scarlet fever, 18 patients with measles, 22 patients with bronchitis, 12 patients with bronchopneumonia, 19 patients with catarrhal cough, 30 patients with influenza, 10 patients with pulmonary tuberculosis, 6 patients with pharyngitis, and 10 patients with laryngitis, a total of 202 patients suffering from various diseases of the respiratory tract with the exception of whooping cough.

In this material the presence of pertussis bacilli was not demonstrated in any case except in 9 out of the 301 persons who had lived in contact with infectious pertussis patients; these 9 persons all acquired whooping cough.

The fact that whooping cough is still one of the most common diseases in children, together with the other fact that the source of infection often is quite unknown, suggests very strongly that the infection is not infrequently spread by patients in whom whooping cough is unrecognized. In fact, several investigators have demonstrated Bordet-Gengou bacilli in patients with abortive whooping cough, and others have verified such cases by means of the complement fixation test. Clinical experiences show that adults and older children often have whooping cough in an atypical form, and that the same applies to pertussis patients after prophylactic vaccination or after vaccination in the first stage of the disease.

It is difficult, however, to judge with any fair degree of certainty as to the frequency of these abortive cases of whooping cough.

I shall briefly report the series of examinations comprising eighty families in which whooping cough made its appearance. The presence of this disease was ascertained by demonstration of Bordet-Gengou bacilli in the cough-plates forwarded to the institute from members of the respective families. All the members of these families were examined once or more by means of cough-plates or by smear cultures from the pharynx and larynx. In addition, the clinical course of the various cases of whooping cough in these families was followed very closely, and attempts were made to trace the source of infection. This series of studies covers 385 persons, 202 aged under 15 years and 183 aged over 15 years. Of these, 301 have been mentioned before, in the investigations on chronic carriers of pertussis bacilli.

Seventy-six of the persons under 15 years had clinically typical whooping cough; in these cases the presence of Bordet-Gengou bacilli was demonstrated by the serum institute in the beginning of the disease. Forty children had abortive whooping cough without typical paroxysms or vomiting, but with noncharacteristic coughing that lasted about one month. The remaining eighty-six children were not attacked.

In sixteen of the forty children with abortive whooping cough, the diagnosis was established by demonstration of the Bordet-Gengou bacillus; in twenty-four, the diagnosis was strongly supported by the protracted coughing that appeared after the patient had been exposed to pertussis infection and further by the fact that these patients in all probability had transmitted the infection to other persons who then had clinically typical whooping cough.

Among the 183 persons over 15 years, 1 had clinically typical whooping cough, 4 had abortive whooping cough, and 178 were not attacked.

In all, among 202 children (up to 15 years) whooping cough occurred in 116, and in 40 of these (i. e., about 35 per cent) it took an abortive course. In 183 adults there were 5 cases of whooping cough, 4 of these being abortive.

Thus, it is reasonable to assume that abortive cases of whooping cough, often not recognized, are very frequent. As a rule, they occur in older children or adults, in persons who have had whooping cough before, or in patients who have been vaccinated against this disease.

SUMMARY

1. The results of my examinations are comparable with the hypothesis that the Bordet-Gengou bacillus is the etiologic agent of whooping cough.

2. The cough-plate method has been used for sixteen years at the State Serum Institute in Copenhagen and has proved to be of practical value. It is the best method for diagnosing the disease early.

3. An isolation period of four weeks after the onset of the typical paroxysm has in practice been sufficient for school children.

4. Healthy carries have not been found outside of families in which whooping cough exists.

5. Abortive and quite atypical cases of whooping cough are frequently found, and I believe they play an important rôle in the spread of the disease.

Clinical Notes, Suggestions and New Instruments

A CLINICAL METHOD OF VENOUS PRESSURE DETERMINATION

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In congestive heart failure, the venous pressure reading is of inestimable value. This determination offers a useful means of rating cardiovascular insufficiency. Under normal conditions the heart transports as much blood as comes to it, and there is merely a temporary rise of venous pressure. In cardiac decompensation, however, the load of the heart exceeds its physiologic response. It cannot convey into the arterial circulation the blood that comes to it from the venous circulation. Venous engorgement and stasis result, with a consequent failure of the ventricles. The increased burden on the heart produces cardiac dilatation with consequent heart failure. It has been shown experimentally that the decompensated heart needs more oxygen than the normal heart, whereas under the foregoing conditions its supply of oxygen is actually lessened. The coronary circulation is decreased, which further lowers cardiac efficiency. Venesection, in such instances, may prove a life-saving measure. Eyster¹ states: "The value of venesection in reducing the proportionately high venous blood volume, and the abnormal initial load on the right ventricle, is clearly demonstrated. Improved oxygen utilization by the cardiac muscle, increased coronary flow resulting from slower, stronger contractions [digitalis], and the lowered venous pressure offering less hindrance to the return flow from the coronary sinus are important factors in reducing the anoxemia of the heart muscle as compensation begins to be restored. Ventricular competence is regained when, by improvement in the heart muscle and by reduction of the venous engorgement by rest, venesection or other measures, the muscle begins to respond to the increased load by increased work. As the muscle becomes more efficient in its response, the venous load diminishes and cardiac output and venous pressure return to their normal ranges."

A practical means of estimating venous pressure is here described. This method originated with Gaertner² in 1903, and the author has applied it as a measure of determining the optimum time at which venesection will prove beneficial. Since phlebotomy relieves venous congestion and thereby lessens the load on the heart, and since venous pressure is a measure of venous stasis, the utilization of this method provides a means by which the clinician may be more closely guided in the management of cardiac failure.

1. Eyster, J. A. E.: *Clinical Aspects of Venous Pressure*, New York, Macmillan Company, 1929.

2. Gaertner, Gustav: *Die Messung des Drucks im rechten Vorhof*, München. med. Wchnschr. 1:2038 (Nov. 24) 1903.

METHOD

A prominent vein is selected on the dorsum of the hand. The hand is first lowered until the vein is full. It is then raised slowly with the arm fully extended until the level of the right auricle is reached whence, in the normal person, the vein is seen to go from a state of filling to one of collapse. In cardiac congestion, however, the outstretched hand must be raised considerably above this zero pressure level to a height consistent with the amount of venous pressure present. If the pressure is high, it is then necessary to raise the hand to an appreciable height above the level of the right auricle. This distance can be measured as a rough approximation of the venous pressure. When this pressure head becomes less after one or more venesections, again it furnishes a roughly measurable factor. The collapse of the vein occurs when the venous pressure falls to a level not exceeding the hydrostatic pressure. "The vein represents a manometric tube connected with the right auricle. If this is compared with the estimated level of the right auricle, one can express the venous pressure in millimeters of water."

The importance of this procedure is readily demonstrated after a venesection, at which time it is found that the venous pressure is lowered. If the heart tonus is such that recovery can take place, then the pressure remains lowered because of the lessened load and improved circulation. If it is too badly damaged and cannot respond, the venous pressure will be seen not to decrease materially. There is, thus, a prognostic value attached to this procedure as well as a method enabling one to decide when venesection is or is not indicated.

SUMMARY

The description of a method is here given for the bedside determination of venous pressure without the use of apparatus. Its clinical significance lies in the fact that it is of invaluable aid in ascertaining the advisability of either single or repeated venesections. It also is of prognostic value, since in cardiac decompensation, if the venous pressure remains lowered after venesection, the conclusion may be reached that the circulatory system has sufficient reserve left to respond to a decreased venous load.

This is not to be construed as a new observation but merely as the application of Gaertner's method to venous pressure, particularly when venesection is to be employed.

327 South Seventeenth Street.

FAULTY BLOOD GROUPING DUE TO AUTO-AGGLUTININS: AN UNUSUAL CASE

PERRY J. MANHEIMS, M.D., AND ENDRE K. BRUNNER, M.D., NEW YORK

For many years, serologists have been interested in the comparatively rare phenomenon of auto-agglutination. This has been quite clearly defined by Boxwell and Bigger¹ in the following simple sentence: "Autohemagglutination is a clumping of erythrocytes into irregular masses, visible to the naked eye, occurring in the presence of the individual's own serum, without bacterial action, at air temperature and reversible at body temperature."

Landsteiner,² Clough and Richter,³ Li Chen-Pien⁴ and other investigators have shown that the auto-agglutinins are present in the blood serum and are dependent on a lower than body temperature and fixed to the red blood cells. The auto-agglutinins can then be freed from the red cells by washing and suspending in warm saline solution, in which solution they can be demonstrated.

The case reported here is the first instance in our experience in which the phenomenon of auto-agglutination caused a faulty blood group diagnosis to be made.

A. Z., a female, was admitted to the medical service of the Lenox Hill Hospital with a hemoglobin reading of 15 per cent, as done by the Sahli method, and a red cell count of 780,000, with the accompanying blood picture of a myelogenous leukemia. An immediate blood transfusion was ordered, and blood was taken for grouping into two small test tubes, one of which contained 2 per cent sodium citrate solution for the red cell suspension, and the other tube received blood which was centrifugated for the serum to be used in cross matching. The routine slide method of grouping was used and there was marked agglutination of the patient's red blood cells, as we thought, by both 2 and 3 grouping serum. A diagnosis of AB (group 4 Jansky) was made and a professional blood donor of that group ordered. On cross matching the blood of the patient and the donor, it was found that the donor's red blood cells were agglutinated by the patient's serum and vice versa. It has occasionally happened that a donor's red cells have been agglutinated by the serum of a patient of the same group, and this has usually been demonstrated as having been due to cold or to auto-agglutinins in the patient's serum by merely mixing the patient's serum and his own red cells at room temperature.

This was done, and there was a very rapid agglutination of the patient's red blood cells by her own serum. It is known that this does not occur at body temperature, and in previous instances of this kind we have gone ahead with the transfusion with no untoward results. But the red blood cells of this patient were also incompatible with the donor's serum, which should not happen with an AB donor whose serum contains no iso-agglutinins. Furthermore, in taking blood from a patient with a very severe anemia the proportion of red blood cells to the serum is very small. Therefore, we suspected that perhaps the auto-agglutinins in the patient's serum contained in the citrated blood might have influenced the original blood grouping.

The red cell suspension was then centrifugated, the supernatant citrate serum was pipetted off, and the red cells were washed with physiologic solution of sodium chloride and then used for a regrouping. This time there was no agglutination with types 2 or 3 grouping serum, and the patient was reclassified as an O (Jansky 1). It was then concluded that the agglutination of the patient's red cells in the original grouping was caused by her own auto-agglutinins; that the citrated red cell suspension used in this grouping contained an unusually large amount of the patient's serum, owing to her extreme anemia, or that the agglutination might have been due to the auto-agglutinins that the red blood cells of the patient had absorbed from her serum at the lower than body temperature.

After we were quite convinced that the patient was an O, a donor of that group was called and on cross matching his serum with the washed red cells of the patient's, no agglutination was seen. His red cells were agglutinated by the patient's serum at room temperature, owing to her auto-agglutinins, but since this would not occur at body temperature and also since the cells of an O are not agglutinated by the serum of any group, the transfusion was given. No reaction occurred.

For the purpose of checking our results, the patient's blood was also grouped against that of two other individuals; a known O and a known AB. With the O donor's serum, the patient's washed red cells were perfectly compatible, while the tests between the donor's serum and the patient's original unwashed citrated red cells, and the patient's serum and the donor's red cells both showed marked agglutination. The cross matching with the blood of the second AB individual and patient again showed the patient's unwashed red cells and the donor's red cells to be agglutinated by each other's serum, while there was no agglutination of the washed red cells of the patient by the second donor's serum.

Aside from the purely serologic interest that this case presents, it brings out two practical points as regards blood transfusion: Merely grouping a patient and procuring a donor of that group is not giving the patient sufficient protection against being transfused with incompatible blood. Every donor and patient should be cross-matched. Furthermore, in any instance in which auto-agglutinins are demonstrable in the blood of the patient, a regrouping should be done, washed red blood cells being used.

111 East Seventy-Sixth Street.

From the Achelis Laboratory of the Lenox Hill Hospital.

1. Boxwell, W., and Bigger, J. W.: Autohemagglutination, *J. Path. & Bact.* 34: 407-417 (July) 1931.

2. Landsteiner, K.: Ueber Beziehungen zwischen dem Blutserum und den Körperzellen, *München. med. Wchnschr.* 50: 1812 (Oct. 20) 1903.

3. Clough, M. C., and Richter, J. M.: A Study of an Auto-Agglutinin Occurring in a Human Serum, *Bull. Johns Hopkins Hosp.* 29: 86 (April) 1918.

4. Pien, L. C.: Investigation on "Cold" or Autohemagglutination, *J. Immunol.* 11: 297 (April) 1926.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
PAUL NICHOLAS LEECH, Secretary.

INTRAVENOUS USE OF BARBITAL COMPOUNDS (II)

In 1931 the Council adopted and published a report giving the status and limitations of the use of barbitol compounds intravenously for anesthesia (*THE JOURNAL*, Dec. 19, 1931, p. 1886). The Council at that time decided on definite limitations for the intravenous use of these compounds for induction of anesthesia and sponsored the following statement: "Their intravenous use should be limited for the present to conditions in which oral administration is not feasible either because the patient is unconscious, as in cerebral hemorrhage, eclampsia, or status epilepticus, or because he resists, as in delirium, or because a very prompt action is imperative, as in convulsion from local anesthesia."

In the consideration of sodium amytal and the brands of pentobarbital sodium, the Council recognized that these drugs might be administered intravenously in the conditions mentioned in its report and laid down the following stipulation with regard to propaganda for their intravenous use: "The acceptance is subject to the continuance of the agreement under which the products are to be sold and distributed, namely, that they will not be sold for intravenous use in the open market but may be sold to hospitals and institutions for investigation purposes; and that the intravenous products will not be advertised nor propaganda made for the intravenous use of soluble barbitol compounds for the induction of anesthesia. On the other hand, the Council recognizes that barbitol derivatives can be administered intravenously in conditions in which oral administration is not feasible either because the patient is unconscious, as in cerebral hemorrhage, eclampsia or status epilepticus, or because he resists, as in delirium, or because a very prompt action is imperative, as in convulsions from local anesthetics; and has decided that such use may be mentioned in the advertising for these products.

In the recent consideration of Pernoston, a barbituric acid derivative marketed only in injectable form, the question was raised as to whether or not in the light of accumulated experience it was desirable to relax the limitations which the Council had placed on the intravenous use of barbitol compounds. It was determined to send a questionnaire to a selected list of surgeons, anesthesiologists and others asking whether they considered that the time had arrived when the Council should agree to the advertising of preparations of soluble barbiturates for intravenous injection for induction of anesthesia.

The following replies to the questionnaire were received and are published (in alphabetical order) with the consent of the respective consultants:

Letter from Dr. Willard Bartlett, St. Louis:

"In our opinion the situation in regard to the intravenous use of the barbituric acid compounds has not changed since the publication of the report of the Council in 1931. Both clinical and experimental work, the literature of which we have followed with the closest interest, confirms the important facts in the matter as follows:

"1. The desirable effects of the drugs are obtained by oral or rectal administration.

"2. Oral and rectal administration of divided doses make it possible to test every individual for idiosyncrasy.

"3. There is a risk inseparable from the intravenous administration which, although that risk be remote, does not, in view of the foregoing facts, justify intravenous administration except in such an emergency as the convulsions of tetanus.

"4. It is our own feeling that the position of a doctor who, in the absence of a gross emergency, gave one of the barbituric acid compounds intravenously and had a fatal accident occur would be difficult to defend in court in view of these facts and the general opinion of nonmedical authorities qualified to hold an opinion on the subject.

"5. The clinicians who formerly wrote glowingly of the advantages of intravenous administration have not only modified their tone on the whole but have turned to oral and rectal administration as routine.

"In conclusion we believe it would be a mistake to allow the broadcasting of advertisements which would in any way encourage men not thoroughly familiar with these drugs to use them intravenously."

Letter from Dr. W. J. Bleckwinn, Madison, Wis. (in part):

"Concerning the question which was raised in your letter of the intravenous use of barbiturates in the field of anesthesia, I would say that I have no opinion other than that expressed in an article read before the Wisconsin State Medical Society at Milwaukee. I am in accord that the barbiturates are not analgesic and therefore I do not believe that, with the dosage necessary to produce the degree of unconsciousness for surgical work muscular relaxation and analgesia will occur.

"I am not interested in surgical anesthesia and am therefore unable to express an opinion of any value concerning the use of this series of drugs in surgical anesthesia but I am firmly of the opinion that they are invaluable in controlling convulsions from strychnine, tetanus, status epilepticus, eclampsia, to counteract overdoses of cocaine, the wild deliriums due to either infectious disease or intoxication, in the prevention of the acute exhausted states associated with the deliria seen by the general practitioner before such patients are sent to the proper institution and, of course from my own viewpoint the most important of all, the application of barbiturate therapy in the field of psychiatry. I wish to emphasize one fact, in the light of our experience of four years, that no oral administration of these drugs can compare with the intravenous medication in the above mentioned conditions and again, for the sake of emphasis, the importance of the proper technic of administration in avoiding the untoward reactions reported at your Council meeting and experienced by all of us before this proper technic was followed."

Letter from Dr. Hugh Cabot, Rochester, Minn. (in part):

"Please pardon my delay in answering your letter of March second asking my opinion as to the position taken by the Council on Pharmacy and Chemistry in regard to whether or not the time has arrived when the Council should permit the advertising of preparations of soluble barbiturates for intravenous injection for induction of anesthesia." I have delayed answering it in order to be quite sure that I might express the opinion which I really held.

"I think the time which has elapsed since the previous report of the Council in December, 1931, has added importantly to our knowledge of the fields in which these preparations are useful. At that time there was considerable use of these preparations for or in connection with general anesthesia for surgical operations. Its use in this field has, I think, very much diminished, and I doubt whether as time goes on it will survive for this purpose. On the other hand, during the same period the value of the drug used intravenously for other purposes, chiefly in tetanus, eclampsia and strychnine poisoning, has been pretty satisfactorily demonstrated.

"It seems to me that it is now very desirable that preparations of the barbiturates for intravenous use should be on the market and readily obtainable. When they are needed, they are needed promptly, and I think physicians and hospitals can hardly be expected to keep them on hand unless they are obtainable through normal channels. I believe, therefore, that the previous ruling of the Council might properly be modified in this respect since I am firmly of the opinion that for the purposes above mentioned no method of administration other than intravenous can be relied upon to produce the desired effects."

Letter from Dr. Edward D. Churchill, Massachusetts General Hospital (in part):

"In direct answer to your question it is my opinion that the Council should not permit the advertising of preparations of soluble barbiturates for intravenous anesthesia. In very special cases this method may be employed but only by individuals well conversant with the pharmacological action and dangers of these preparations. I feel that the margin between safety and danger with anesthetic doses of barbituric acid compounds is too small and the liability for variations in individual susceptibility too great to recommend this form of anesthesia to the profession at large."

Letter from Dr. George W. Crile, Cleveland:

"In response to your letter of February 20, I should say that there is a sound principle which contraindicates the use of intravenous anesthesia in any form whatsoever. The reason for this is obvious. The anesthetic is irrecoverable and should there be an overdose it would be fatal. Moreover, these anesthetics anesthetize all protoplasm, not the brain only, and hence they should be used only in cases in which there is a good factor of safety, that is to say, intravenous anesthesia should never be used in cases in which the patients are depressed by shock, hemorrhage, disease, infections, etc."

Letter from Dr. Elliott C. Cutler, Peter Bent Brigham Hospital, Boston:

"I am wholeheartedly opposed to such action on the grounds (1) that any anesthetic which has to be given intravenously and for which there is not a specific chemical antidote which can stop the anesthetic at once is always a danger to the patient; and (2) that there are other anesthetics much more suitable and equally efficacious in all conditions.

"I should hate to see the Council popularize this drug, though I cannot say from personal experience that it has grave dangers."

Letter from Dr. Charles Gordon Heyd, New York:

"I do not believe the time has arrived when the Council should permit the advertising of preparations of soluble barbiturates for intravenous injection for induction of anesthesia.

"Intravenous anesthesia by the barbiturates makes the induction of anesthesia a matter of trifling technical procedure. It allows the induction of this type of anesthesia in a physician's office and in many cases the anesthesia will tend itself to an extension of office surgery or criminal abortions. It is not without danger and its administration, if possible, for anesthesia purposes should be confined to hospital practice.

"I am enclosing herewith a reprint of an article bearing on the subject (*Am. J. Surg.*, July, 1930, pp. 29-35).

"I see no reason why it cannot be employed in hospital practice where the safeguards are usually adequate to protect the public against the possible implications mentioned above."

Letter from Dr. Carl H. Lenhart, Lakeside Hospital, Cleveland:

"I have had some bad experiences with intravenous use of barbitol preparations, and I am no longer interested in them. Naturally I am prejudiced against forcing its use upon the medical profession by advertising methods."

Letter from Dr. John S. Lundy, Mayo Clinic, Rochester, Minn. (in part):

"I think that the soluble barbiturates for intravenous injection should be made available to every physician for emergency purposes and that the commercial houses should be encouraged to make them available. However, so far as advertising is concerned, the matter should so read that it will be understood that the drug is a definite antispasmodic and is an anesthetic and that it may be used essentially for either or both purposes in an emergency but that it is not intended for routine use."

Letter from Dr. E. I. McKesson, Toledo, Ohio (in part):

"While it is admitted that the injudicious and indiscriminate use of these drugs is capable of harm, we feel that the decision as to when they should be employed might better be made by the physician using them. It does not seem fair that the profession as a whole should be denied free use of drugs simply because bad results may follow their ignorant or careless administration."

"It is our opinion that the general advertisement and sale of soluble barbiturates for intravenous use should be permitted."

Letter from Dr. I. S. Ravdin, University of Pennsylvania School of Medicine:

"I believe I am correct when I state we were the first to use sodium amytal for basal anesthesia in man. From the time we first began until the present time we have felt that the intravenous use of the barbiturates was dangerous. As our experience with the barbiturates has increased we have felt that their administration by mouth or by rectum, preliminary to narcosis with other agents, is often advantageous. We have, however, become more and more convinced that they should never be used beyond the point of basal anesthesia, and even then, we believe, one is not justified in using the barbiturates for basal anesthesia routinely."

"There seems to be no reason why the barbiturates should be given intravenously except on the rarest of occasions, since the oral and rectal administration will give satisfactory results in the majority of instances. In the delirious or psychopathic patient the intravenous use of the barbiturates is no doubt indicated; but looking back over an experience of six years I believe the indications for the intravenous use are limited to this group."

"The portion of the Council's statement beginning with 'Their intravenous use should be limited' seems to me to cover the indications for the intravenous use of the barbiturates. I do not believe it is safe to go beyond this statement."

Letter from Dr. L. F. Sise, Lahey Clinic, Boston:

"I believe that manufacturers should be allowed to advertise such use, but for basal anesthesia or narcosis only, and not for complete anesthesia. The reasons for this opinion are as follows:

"1. There is a field of usefulness for the intravenous administration of these drugs in conjunction with other agents. Our experience in the past in this field has been very satisfactory. The field is quite narrow and at the present time we are not thus using barbiturates, partly because of the narrowness of the field; partly because tribrom-ethanol has with us replaced this use, and partly because the oral administration of barbiturates is more convenient and practical in a busy clinic."

"2. The use of barbiturates for complete anesthesia is not advisable."

"3. Because there are undesirable effects and dangers connected with the intravenous use of the soluble barbiturates is no reason why they should not be thus used. A large proportion of the most useful procedures in medicine and surgery have undesirable effects and dangers connected with them if they are not properly used."

"4. It is highly desirable that these products be on the market and conveniently on hand for intravenous use in certain emergency conditions. I feel that the wider field of advertising of these products would be an aid in keeping them readily available."

Letter from Dr. Arthur L. Tatum, University of Wisconsin:

"Intravenous injections of short acting barbiturates are occasionally justified:

"(a) For preanesthetic depression (not complete surgical anesthesia) in special cases where immediate sedation or hypnosis is required or desirable. In trained hands, intravenous injections can be better quantitated than when the barbiturate is given per os, where variations of absorption occur. However, the intravenous method of administration should not become routine because of possible abuse. By comparison, however, hypodermics of morphine and scopolamine are common and accepted as justified."

"(b) For antidoting of convulsive poisoning, quick action is required; hence, intravenous administration is fully justified. Certain cases of dementias are included in this group."

"For ordinary hypnotic uses, the barbituric acid is essentially identical to the sodium salt, since the stomach is normally acid which precipitates the barbituric acid in the stomach."

"We are adamant in insisting on individualization of preanesthetics as well as anesthetics according to the requirements of each individual

case. Routinization in use as preanesthetic depressants is strongly condemned."

"If barbiturates are chosen for preanesthetic depression, the operator should base his choice on whether or not a short, medium or long period of hypnotic depression is desired."

"Finally, people will give intravenous injections of barbiturates as preanesthetic depressants regardless of advertising, so if caution is insisted on, i. e., limiting recommendation only in selected and special instances, perhaps this positive limited recommendation would do more good than not to have so stated it."

Letter from Dr. Soma Weiss, Boston City Hospital (in part):

"As far as the practice of surgeons is concerned in this hospital, and other hospitals with which I am familiar, it is my impression that this problem is still entirely in a rather chaotic and experimental stage. Following the early and rather enthusiastic reports concerning amytal particularly, various barbituric acid derivatives have been used by surgeons in relatively high doses. Although large doses are still used by various surgeons, especially those in smaller communities, it is my impression that gradually through sad experiences surgeons are refraining from using barbituric acid derivatives in relatively large doses."

"I believe that the report of the Council, published in 1931, on the Intravenous Use of Barbitol Compounds is still up to date. I may say that in this article the rôle of the relation between the state of the central nervous system and the dosage of the barbituric acid derivatives is somewhat underestimated. The greatest danger in the intravenous use of barbituric acid derivatives in surgery is due to the fact that, as a result of varying degrees of surgical trauma, loss of blood and other complications, the dose of barbituric acid derivatives which in one patient would not be toxic may become toxic in another individual. I am certain from observing patients, as well as from animal experiments, that in the presence of depressed central nervous system, particularly in shock, smaller doses will prove to be fatal. It is also very probable, although I have not had experience in this, that the detoxication and elimination of the barbituric acid derivatives in the presence of shock will be considerably lowered. As one can never tell in surgery when such emergency will arise, the recommendation of the routine use of intravenous administration of any substance in amounts that produce hypnosis and of any substance which has a relatively long persistent action cannot be advocated."

"There may be, on the other hand, certain special indications when a relatively large dose of barbituric acid derivatives can be given intravenously. Such indications may be, if for certain reasons volatile anesthetics are contraindicated. The upshot of all these considerations is that barbituric acid derivatives in the induction of anesthesia should be used only as adjuvants, similar to the use of morphine, scopolamine, etc. As such, it should be pointed out that they are absorbed well by mouth, and the effect of oral and intravenous administration is quite similar. If, therefore, for some reason, oral administration of such relatively small doses is not feasible, intravenous injection is permissible."

"As to the size of the dosage in such cooperative use of the barbituric acid derivatives, they should be relatively low and should be somewhere between 10 and 20 per cent of the fatal dose. There is some indication, and opinions to this effect are frequently expressed, that these relatively small doses reduce the amount of volatile anesthetics needed."

"In looking over my publication on this problem in the *American Journal of the Medical Sciences*, 1929, volume 178, page 390, I believe that on the whole I still maintain the same opinion as to the indications and danger of the barbituric acid derivatives as expressed there."

"If there is any additional information that you would like on this matter, please do not hesitate to call on me."

The Council has given careful consideration to the replies to the questionnaire, and it believes that the evidence overwhelmingly sustains its previous conclusion concerning the limitations for the use of the soluble barbiturates in the induction of anesthesia. The Council therefore has reaffirmed its previous decision with reference to the advertising of these substances.

§ DOCTOR'S PRESCRIPTION POWDER NOT ACCEPTABLE FOR N. N. R.

"§ Doctor's Prescription Powder" is marketed by the Dermic Laboratories, New York. In the information submitted by the firm for the Council's consideration the product was stated to have the following composition:

1¼ lbs. Salicylic Acid U. S. P.
3½ lbs. Boric Acid U. S. P.
1¼ lbs. Zinc Stearate U. S. P.
2½ lbs. Ammonium Alum U. S. P.
2 lbs. Zinc Oxide U. S. P.
175 lbs. Talcum Powder.

No statement of composition appears on the trade package, on which the preparation is stated to be "Scientifically prepared for the relief of athlete's foot . . . Bromidrosis (Excessive Perspiration) . . . Eczemas." The product is also stated on the label to be "the formula of an experienced and well known Physician." Under "Directions" it is stated, among other things, that the product is "Ideal for all affections caused by heat," "Sanitary Napkins. To deodorize use freely."

The statement of composition shows that the preparation is unnecessarily complex and the name gives no information

as to the ingredients. There is no evidence that such a complex mixture is more effective than a simpler mixture for the relief of some of the conditions mentioned on the trade package. In particular, there is no evidence that this or any other deodorant will deodorize sanitary napkins as claimed on the trade package. The Federal Trade Commission recently issued the following ruling on consent of the Sanitary Napkin Industry:

"The use of the term 'deodorized,' or similar terms or expressions, in the advertising or sale or offering for sale of sanitary napkins in a manner calculated to mislead or deceive the trade and purchasing public into believing that the said sanitary napkins contain a deodorant or possess deodorant properties, when such is not the case, is an unfair trade practice."

The Council declared "R Doctor's Prescription Powder" unacceptable for New and Nonofficial Remedies because it is an unnecessarily complex mixture marketed under a noninforming name with no statement of composition and with unwarranted and exaggerated therapeutic claims.

PRELIMINARY REPORT OF THE COUNCIL

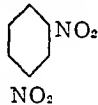
THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING PRELIMINARY REPORT.

PAUL NICHOLAS LEECH, Secretary.

ALPHA-DINITROPHENOL

Elsewhere in this issue appears an article by Cutting, Mehrtens and Tainter on dinitrophenol. As this compound is relatively new both to pharmacology and to clinical medicine and is not described in standard works on materia medica, the editor of THE JOURNAL requested that it be considered by the Council. Accordingly, the Council has adopted the following for publication as a preliminary report:

Alpha-dinitrophenol (1:2:4) OH



is a compound known in industry chiefly as an intermediate in the manufacture of explosives. It came into prominence in France during the World War, when it was extensively employed in the production of munitions. Numerous cases of poisoning occurred in factory workers handling the material; not a few of those exposed developed headache, dizziness, vomiting, high fever and other alarming symptoms, followed in some instances by sudden death. These accidents grew so numerous that it was proposed at one time to abandon the manufacture of this compound despite the then great demand for it. Fortunately, hygienic measures instituted after the source of the intoxications had been traced completely prevented further casualties.

In the extensive pharmacologic scrutiny to which dinitrophenol 1:2:4 was subsequently subjected, several highly interesting properties came to light. In particular this compound was found to produce marked hyperthermia in animals; this led to death if the dosage was large enough.

Cutting, Mehrtens and Tainter and their co-workers have found, as reported in their paper, that the administration of dinitrophenol in proper dosage may result in acceleration of cellular metabolism, both in animals and in man, without apparent evidence of deleterious effect. They therefore propose the clinical use of this compound in individuals in whom acceleration of the metabolic rate may be of value. Dinitrophenol appears, in some conditions, to have advantages over thyroxine for this purpose.

The authors realize, of course, that their very extensive investigations have not yet ruled out beyond a reasonable margin of doubt the possibility of remote toxic effects in the clinical use of dinitrophenol, somewhat as liver atrophy has occurred after cinchophen. Their conclusion, in which the Council concurs, is therefore reproduced herewith: "There are limitations to and possible dangers from the use of the drug clinically. It should be used only under strictly controlled conditions."

Alpha-dinitrophenol is at present available on the market for chemical use only and is not sold as a drug. The Council has therefore deferred further consideration of this preparation until more evidence is adduced for its therapeutic usefulness.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
RAYMOND HERTWIG, Secretary.

NOT ACCEPTABLE

VI-TONE (MALT CHOCOLATE FLAVOR)

The Vi-Tone Company, Hamilton, Canada, submitted to the Committee on Foods a chocolate flavored powder "Vi-Tone (Malt Chocolate Flavor)" containing malt extract, sucrose, glucose, coconut oil, skim milk, soya bean, calcium phosphate and salt. It is intended for the preparation of a beverage with milk or water.

Discussion of Label.—The label prominently defines the product as "A tonic food beverage—an extraction of malt and milk—rich in proteins and vitamins of the soya bean" and states that "Vi-Tone should never be boiled as the diastase, vitamins and other digestive principles are destroyed in this manner." This food is no more a tonic than are other foods. The designation "tonic food" is deceptive because it implies special medicinal or therapeutic values.

The description "an extraction of malt and milk—rich in proteins . . . of the soya bean" is an incomplete statement of ingredients. Descriptive statements accompanying fanciful trade names such as "Vi-Tone" should be complete and include all ingredients arranged in the order of their descending proportions by weight in the product.

The claim "rich in vitamins of the soya bean" connotes that soya bean and the product are rich in all the vitamins; soya bean is a poor source of vitamins A and C. Vitamin claims should specify the vitamins referred to.

"Rich in proteins of the soya bean" implies that soya bean is a major ingredient of the product, whereas it is present in a rather small proportion.

The statement regarding the destruction by boiling of "diastase, vitamins and other digestive principles" leads the reader to believe that the product is valuable for its "digestive principles." The product may be diastatically active because of the malt extract ingredient, but any starch digestive effect it may have on the starch of other ingested foods is unimportant. The starch digestive powers of a small amount of saliva swallowed with foods is more effective.

Discussion of Advertising.—An advertising leaflet entitled "VI-TONE TO THE HEALTH OF THE NATION" contains numerous exaggerated and unwarranted statements:

"VI-TONE MAINTAINS YOUTH, VIGOR AND ENERGY." "VI-TONE VITAMINES—THE FIRST ESSENTIALS OF LIFE AND HEALTH." "The three greatest sources of digestible vitamins are the soya bean, malt and milk, and these are combined to make Vi-Tone . . . —it supplies that vital energy that is indicated by the name Vi-Tone. The malt in Vi-Tone also contains diastase, a vegetable digestant, which converts the free starch in other foods, such as potatoes and white bread, into a form which makes it easily assimilated by the system. Starch cannot digest in the gastric juices, which are acid, without diastase. Vi-Tone is not only itself easily digested, but it thus increases the value of all other foods. Men and women with saw-toothed nerves need Vi-Tone. The fagged feeling that follows a tense day at the office or in social duties does not come from tired muscles; but from nerves that have been drained of their vitality. The nerves are fed and revived by Vi-Tone. The student whose brain refuses to function further, because it has reached the limit of endurance, does not crave heavy food because he does not require it. Vi-Tone fills his need. The aged and infirm find renewed life and vigor in Vi-Tone. It stimulates the appetite, aids digestion and improves the general health. Children are full of the spirit of life and fun when their bodies are abundantly supplied with vitamins. Their subconscious minds know what they need and lead them instinctively to Vi-Tone. . . . Vi-Tone may be used as a reducer when taken hot or cold for breakfast or lunch instead of heavy foods. It contains the required nourishment. Vi-Tone, for those who suffer from malnutrition, or are anaemic, thin and weak, will build up the system with rich red blood and firm flesh. . . . It improves digestion and enables the system to assimilate the full nourishment from other foods, thus correcting malnutrition. As a natural consequence, it prevents constipation. . . . Physicians know the value of Vi-Tone and gladly recommend it. Ask your own doctor. The scientific combination of the soya bean, malt extract and milk all so rich in protein and vitamin content goes to make the delicious easily digestible chocolate flavored Vi-Tone, supplying that vital energy indicated by the name. Radiographers use Vi-Tone in connection with gastro-intestinal examination making a most delicious drink for Barium suspension and as a diet in Mucus Colitis and kindred ailment. Physicians strongly recommend Vi-Tone."

This advertising represents a crude attempt to transform Vi-Tone into a "patent medicine food." It is even claimed that this high caloric food "may be used as a reducer"; although it provides little indigestible residue it is stated that "it prevents constipation." All the prevalent misleading claims adopted for so-called health foods, with hardly an exception, are brought into service for Vi-Tone. For giving final authoritative support to the alleged medicinal claims, it is stated that "physicians strongly recommend it."

Such advertising degrades the sale of foods to the level of deception used in promoting nostrums and is a cruel exploitation of the public.

The manufacturer was informed of the Committee's report but has not demonstrated that any steps have been taken to correct the label and advertising in accordance with the Committee's recommendations. Vi-Tone therefore will not be listed among the Committee's accepted foods.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

BUY JIMINY (A PEANUT BAR)

Manufacturer.—The Curtiss Candy Company, Chicago.

Description.—A bar containing peanuts, sucrose, corn syrup, coconut butter and salt.

Manufacture.—The sugar and glucose are cooked in open kettles until a temperature of 118 C. is obtained; a portion of the peanuts is added and the mass is cooked until the peanuts are roasted and a definite temperature is reached. The coconut butter, salt and the remainder of the peanuts are added; the mix is heated until a definite temperature is attained; it is uniformly spread on a steel belt and automatically cut into bars, which are refrigerated and wrapped.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 1.5 |
| Ash | 1.9 |
| Fat (acid hydrolysis method)..... | 33.0 |
| Protein (N X 6.25)..... | 18.4 |
| Reducing sugars as dextrose..... | 12.0 |
| Sucrose (copper reduction method)..... | 14.4 |
| Crude fiber | 1.2 |
| Carbohydrates other than crude fiber (by difference)..... | 44.0 |

Calories.—5.5 per gram; 156 per ounce.

WHITE HOUSE RICE FLOUR

Manufacturer.—Standard Rice Company, Inc., Houston, Texas.

Description.—Scoured rice flour.

Manufacture.—Scoured rice is pulverized between corrugated rolls and sifted over silk cloth; the flour passing through the silk is automatically packed in wax-paper wrapped cartons.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 9.3 |
| Ash | 0.8 |
| Fat (ether extraction method)..... | 0.7 |
| Protein (N X 5.95)..... | 6.7 |
| Crude fiber | 0.6 |
| Carbohydrates other than crude fiber (by difference)..... | 81.9 |

Calories.—3.6 per gram; 102 per ounce.

PURE GOLD BREAD

Manufacturer.—The Kilpatrick Baking Company, Denver.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sweetened condensed skim milk, sugar, lard, salt, dry whole milk, yeast, diastatic malt syrup, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

LUCKY GLUTEN FLOUR

Manufacturer.—Federal Mill, Inc., Lockport, N. Y.

Description.—Wheat gluten flour containing not more than 44 per cent of starch.

Manufacture.—The gluten flour is prepared by admixing definite proportions of ground gluten with a "standard patent" flour. The ground gluten is manufactured from wheat flour by washing starch out of a wheat dough with water in a special machine. The starch flows away with the water, whereas the gluten with a small amount of starch remains behind as a gummy mass which is dried in "vacuum" driers and milled to a flour.

Analysis (submitted by manufacturer).—

| | per cent |
|---|---------------------|
| Moisture | 7.7 |
| | moisture free basis |
| Ash | 1.1 |
| Fat (ether extraction method)..... | 2.2 |
| Protein (N X 5.7)..... | 42.8 |
| Nitrogen | 7.5 |
| Starch (diastase method)..... | 40.9 |
| Crude fiber | 1.1 |
| Carbohydrates other than crude fiber (by difference)..... | 45.1 |

Calories.—3.7 per gram; 105 per ounce.

Claims of Manufacturer.—Especially manufactured for recipe preparations for special diets. Fulfills United States Department of Agriculture definition and standard for gluten flour.

NESTLÉ'S, IDEAL, LA LECHERA, MILKMAID, ALPINE BRANDS UNSWEETENED EVAPORATED MILK

Manufacturer.—Nestlé's Milk Products, Inc., New York.

Description.—Unsweetened, sterilized evaporated milk. The same as Alpine, Lion and Everyday Brands Sterilized, Unsweetened Evaporated Milk (THE JOURNAL, Jan. 23, 1932, p. 319).

SCHAIBLE'S LONG BEST-YET BREAD

Manufacturer.—Schaible's Bakery, Inc., Easton, Pa.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sucrose, sweetened condensed skimmed milk, lard, dry skim milk, salt, malt extract, calcium acid phosphate, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

MEADOWMERE BRAND UNSWEETENED EVAPORATED MILK

Packer.—The Page Milk Company, Merrill, Wis.

Distributor.—Wm. Steinmeyer Company, Wholesale Grocers, Importers and Coffee Roasters, Est. 1864, Milwaukee.

Description.—Unsweetened evaporated milk; the same as Page Evaporated Milk, Sterilized Unsweetened (THE JOURNAL, May 30, 1931, p. 1872).

MARTINELLI'S GOLD MEDAL PURE CHAMPAGNE TYPE SPARKLING APPLE CIDER (CARBONATED)

Manufacturer.—S. Martinelli and Company, Watsonville, Calif.

Description.—Carbonated pasteurized sweet apple juice.

Manufacture.—The cider as described for Martinelli's Gold Medal Sweet Pure Apple Cider (THE JOURNAL, June 24, 1933, p. 2010) is carbonated by being pumped through a carbonator consisting of a silver lined dome filled with glass balls, over which the cider is sprayed and percolates to the bottom of the dome under a pressure of 30 pounds of carbon dioxide. From the carbonator the juice is forced by gas pressure to a high pressure filling machine, where the bottles are filled and capped under pressure. The bottled juice is pasteurized for thirty minutes at 68 C.

Analysis, Calories, Vitamins and Claims of Manufacturer.—See Martinelli's Gold Medal Sweet Pure Apple Cider (THE JOURNAL, June 24, 1933, p. 2010).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 15, 1933

COPPER IN THE DAILY DIET

Copper occurs frequently in the various foods that enter into the human diet. The investigation of its occurrence in such materials began more than a century ago.¹ The accurate estimation of traces of copper in organic matter has offered considerable difficulty until comparatively recent times. Most persons in the past have viewed the element in food materials as a chance contaminant, the presence of which might readily become of toxicologic moment. Of late the subject has presented great interest, since the study of various forms of anemia has led to general application of the observation by Bunge in 1889 that men and mice could be made anemic by a diet of cow's milk exclusively; and of the discovery by Hart, Steenbock, Waddell and Elvehjem that a prompt regeneration of hemoglobin could be obtained in milk-fed anemic rats by administration of small amounts of inorganic copper. Newell and McCollum² of the Johns Hopkins University do not hesitate to class copper as an essential of the diet, and this conclusion is shared by many investigators who have been engaged in researches on blood regeneration.

Several years ago, Flinn and Inouye³ of Columbia University remarked that copper is so universally distributed throughout the plant and animal kingdoms as to raise the question whether it may not play some important part in the metabolic reactions of the organism. Certainly its presence in plants and animals alike cannot be explained simply by its adventitious occurrence in the soil. There is increasing evidence that, up to a certain point, copper may be beneficial to both animals and plants, but that, in excess of this quantity, ill effects sometimes, but not always, ensue. As Rose points out, the constant occurrence of copper in association with iron in the blood and tissues of men and animals, and the striking fact of its high concentration

in the liver of the new-born would of themselves justify inquiry into its physiologic significance. There have been hasty attempts to introduce the use of copper widely into human therapy of disorders of the blood, notably all types of anemia, even before the facts are well established. Granted that there may be occasional shortage of iron in the intake of man, is this necessarily true of copper? The quantity actually needed, judged by all the recent studies of nutritional anemias in animals, probably does not exceed one-tenth that of iron.

According to Flinn and Inouye, only a small fraction of ingested copper is eliminated promptly in the urine. Therefore the study of the latter excretion in man is not without interest at this time. At the Montreal General Hospital, Rabinowitch⁴ has carefully examined the urine of fifty persons selected at random except that histories were carefully taken in order to exclude cases in which there was any suggestion of undue exposure to copper through treatment or occupation. From the analytic results, copper appears to be a constant constituent of urine of normal persons. The amounts found ranged between minute traces and 0.4 mg. per liter and between traces and 0.7 mg. for twenty-four hours. In two copper "balance" experiments in which the subjects were fed copper, the amounts were appreciably larger. Obviously, people consume quite unwittingly, day by day, far larger quantities of copper than the data presented indicate. Probably there is more actual danger at present of excessive intake than of deficiency in the human dietary.⁵ At any rate the hasty inclusion of copper in present-day therapeutic programs may be ill advised. Intensive study of the problem for man is imperative.

SOME PROBLEMS OF THERAPEUTIC RESEARCH

The rapid progress that clinical medicine has experienced in recent years has been accelerated by the labors of scores of scientific laboratories. Sir F. G. Hopkins, distinguished president of the Royal Society of London, once remarked¹ that experience at the bedside and the habit of close observation are essential for the making of a successful physician. These and these alone can qualify him for the application of knowledge to the relief of human suffering; but history shows that knowledge itself grew slowly when bedside observations were its chief source. This is, perhaps, only another way of saying that the physician on whom the task of medical leadership falls needs certain types of cooperation outside the clinic to enable him to attain his highest aims most effectively.

1. The subject has been reviewed by Rose, Mary S.: *The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body*, Yale J. Biol. & Med. 4: 499 (March) 1932.

2. Newell, J. M., and McCollum, E. V.: *Studies on the Role of Zinc in Nutrition*, J. Nutrition 6: 289 (May) 1933.

3. Flinn, F. B. and Inouye, J. M.: *Some Physiological Aspects of Copper in the Organism*, J. Biol. Chem. 84: 101 (Oct.) 1929.

4. Rabinowitch, I. M.: *The Copper Content of Urine of Normal Individuals*, J. Biol. Chem. 100: 479 (April) 1933.

5. Gordon, A. H., and Rabinowitch, I. M.: *Yellow Atrophy of the Liver*, Arch. Int. Med. 51: 143 (Jan.) 1933.

1. Science and the Nation, edited by A. C. Seward, Cambridge, University Press, 1917, p. 231.

It has been said that in the wild-goose chase for remedies in the past the result was generally negative and the physician had almost invariably to resign himself to do what he could through merely alleviating by the simplest means the most distressing symptoms of his patient. Even purely palliative or symptomatic treatment is not devoid of virtues in an age of ignorance of underlying causes or inability to avert them. There is, however, considerable danger that a widespread attitude of so-called therapeutic nihilism among physicians may delay the development of rational therapy. There have, indeed, been vigorous reforms in drug treatment in recent years. Lee² has remarked that physicians no longer administer the old mixtures of innumerable drugs, given with the comprehensive hope that some one component would hit the mark, and hence called shotgun prescriptions. Large quantities of individual drugs also are avoided, and the endeavor is made to reach only the specific functions that are disordered.

The complaint is not infrequently heard that real experimental therapeutics has often been hampered rather than helped by the selfishness and greed of commercial interests. The experience of the Council on Pharmacy and Chemistry of the American Medical Association over a quarter of a century could be drawn on to support some of these criticisms. The great development of university laboratories and endowed research institutes has therefore been looked on as the saving feature in a distressing outlook. Sir Henry H. Dale,³ the director of the National Institute for Medical Research in London, has pointed out in an inspiring address that investigation in that group of sciences which contribute to medicine entails certain special obligations. The practitioners of medicine are bound, by a tradition of long and honorable history, to place any new knowledge gained in the practice of their art freely at the disposal of their professional brethren, without any concealment or any attempt to restrict its use for private advantage. This tradition has no connection with any formal code of professional etiquette governing medical practice. Its basis is a recognition of an essential condition for the advance of medical science; and in recent years, as such advances have come in increasing measure from the research laboratories, the workers in these laboratories, whether medically qualified or not, have in many instances shown themselves eager to embrace this great medical tradition and to accept this freedom of the great medical brotherhood.

Here is an ideal that should not be abandoned. Dale further noted, however, that even laboratories supported by industrial enterprise can be, and not infrequently are, inspired genuinely by the ideals of the

advancement of medical science and of service to suffering humanity.

The investigator in the medical sciences isolated in a detached laboratory not infrequently finds real advantage in the cooperation of the specially equipped laboratories of industrial organizations where programs can be prosecuted on a large scale or with unique facilities. The laboratories of the pharmaceutical industries are often helpless without the cooperation of clinical experts. Dale is inclined to doubt whether in the field of medical science the ideal relationship has yet been everywhere established, between research in the universities and the hospitals, on the one hand, and that associated with the pharmaceutical industry on the other. The finding and acceptance of a proper relationship, however, is vital, he says, to the progress of the two alike, and to their union in an ordered advance, along the common front of medical science and its applications.

DINITROPHENOL, A METABOLIC STIMULANT

Elsewhere in this issue appears a report by Cutting, Mehrtens and Tainter of Stanford University relative to the actions and uses of dinitrophenol (1:2:4), a preparation with the apparently remarkable power of stimulating metabolism enormously, producing pyrexia, and without such deleterious symptoms as would result from equivalent doses of thyroid gland. In this issue appears also a preliminary report by the Council on Pharmacy and Chemistry concerning this substance. Some years ago Joslin remarked that it was extremely fortunate that insulin is not effective by mouth, since otherwise numerous fatal accidents might follow its use. A drug with the potency and effects of dinitrophenol is a two-edged sword with appalling possibilities for harm as well as for good.

As a result of their investigations of the product, the investigators suggest as possible uses its application in myxedema to control the symptoms that result from insufficient metabolism in that condition. They find it especially valuable in obesity, although, as has been shown in several articles recently published in *THE JOURNAL*, it is possible to obtain the maximal weight loss by dietetic bookkeeping, controlling the food intake alone. On the other hand, it has apparently been possible with dinitrophenol to reduce weight without attempting any dietary restrictions.

Because of its action in producing pyrexia, it offers opportunity for study in relationship to fever treatment of various conditions. Thus the authors mention the possibility of raising the dosage in animals to such an extent that metabolism is increased fourfold and the animal produces heat so fast that it may be killed by the resulting fever.

Obviously the use of the preparation is too new to hazard final judgment as to its value in practical medicine. Apparently it has not been determined whether

2. Lee, F. S.: *Scientific Features of Modern Medicine*, New York, Columbia University Press, 1911.

3. Dale, H. H.: *Academic and Industrial Research in the Field of Therapeutics*, *Science* 77: 521 (June 2) 1933.

or not there are cumulative effects from small doses repeated over long periods. With a drug of this potency, experiments on toxicity covering several years would not be too much to demand. The experience with cinchophen is still ripe in the minds of many clinicians. The possibility of hepatitis and even cirrhosis following the use of a drug with such remarkable powers in relationship to metabolism must be thoroughly investigated. Certainly for the present, at least, such investigations should be largely limited to controlled studies in hospitals by physicians competent in evaluating the effects of the drug, and with laboratory facilities capable of accurately determining blood, body tissue and other changes.

Current Comment

THE OAKLEY EXPERIMENT ON MOTTLED ENAMEL

In numerous American communities, the condition of the teeth known as mottled enamel exists among the residents as a local phenomenon, apparently resulting from a peculiarity of the water supply. Dean,¹ of the National Institute of Health of the United States Public Health Service, has found ninety-seven localities which have been referred to in the literature as areas where mottled enamel is demonstrable or confirmed by a survey of the locality. Recent investigators have placed the cause of this defect of the enamel of the teeth solely on the content of fluorine in the water supply. The interesting experience of the city of Oakley, an agricultural community in Idaho, points in that direction; indeed, according to McKay,² who made the survey, it adds the final proof. In the early twenties, Oakley residents became conscious that their children's teeth presented a disfiguring appearance. They saw that this condition did not exist in children who lived just outside the town but who came into town daily to school. About ten years earlier, Oakley began to use water from a spring in the hills, and six or seven years later this defect of the teeth first appeared. In 1925, McKay and Smith examined the school children of Oakley and found that every child who had used the city water supply during the period in which their enamel was undergoing calcification had mottled enamel on every surface of every permanent tooth. They found also that every child in school who lived outside the town was free from this defect. Following this dental survey, the town decided to change its water supply. McKay, who for years has studied this subject, had suggested in a previous report that a statistical study be made in some community six or seven years after the water supply had been changed. The opportunity came, and in February of this year he reexamined the children of Oakley, assisted by Dr.

Smith, who also took part in the survey made in 1925. If something in the water used by these children during the period of calcification of the enamel caused the defect, the proof should be found in children born about the time the water supply was changed and who at the time of the reexamination had some of their permanent teeth. Such evidence was found at the recent reexamination. The children of Oakley were placed in groups according to their age. In those children born at the time of the change of the water supply or shortly after, there was not a single tooth found that was mottled. Practically all of a few children who at the time of the change of water were from 6 months to 1½ years of age were without mottled enamel. Few children who were from 2½ to 3½ years of age at the time of the change of the water showed any mottled enamel, but every one of the children who were 4½ years of age at the time of the change of the water supply had mottling of the enamel in some degree. The same was true of the children who were from 5½ to 7½ years of age when the change of water was made. One pupil was 11½ years old when the change of the water supply was made. All the teeth of this pupil, excepting the third molars, had been formed during the time this community used the old water supply, and all these teeth were typically mottled. The third molars, which were formed after the change in water, were calcified normally. In the interval of years between the two examinations in this community by McKay, investigators had established the relation between fluorine in the water and the occurrence of mottled enamel. The danger line in the fluorine content of water had been found to be about two parts per million. The former water supply of Oakley when examined by H. V. Churchill was found to contain six parts of fluorine per million; the new water supply has been found to contain less than one-half part per million. This experience completes the proof, McKay believes, of the relation between fluorine in the water and the presence of mottled enamel. It furthermore provides a definite procedure whereby communities that have had to face this problem may protect their children in the future.

Association News

MEDICAL BROADCAST FOR THE WEEK American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

July 18. Seashore vs. City Vacations.
July 20. Frozen Assets.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

July 22. Some Facts About Moles.

1. Dean, H. T.: Distribution of Mottled Enamel in the United States, Pub. Health Rep. 48:703 (June 23) 1933.

2. McKay, F. S.: Mottled Enamel: The Prevention of Its Further Production Through a Change of the Water Supply at Oakley, Ida., J. Am. Dent. A. 20:1137 (July) 1933.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Deaths from Scorpion Sting.—According to *Arizona Public Health News*, within the last two years six deaths from scorpion sting have been reported to the state board of health. Nearly all the six deaths occurred in children. In Arizona there are two species of scorpion, the desert scorpion and the so-called rock or mountain scorpion. The danger apparently depends on the kind from which the sting is received, its size and the age of the person stung.

CALIFORNIA

Personal.—Dr. John L. Pomeroy, health officer of Los Angeles County, was elected president of the Western Branch of the American Public Health Association at its fourth annual meeting in Pasadena, May 29-31.—Dr. Frank B. Galbraith has been appointed health officer of Alameda, succeeding Dr. Ralph W. Sanders, and Dr. Lloyd G. Tyler, San Rafael, health officer of San Anselmo, replacing Dr. Malcolm S. Edgar.

New Milk Ordinance.—A milk ordinance approved for San Francisco, May 15, reduces the maximum bacterial count in market milk from 150,000 nonpathogenic bacteria per millimeter to a maximum of 50,000. Other provisions of the ordinance effect changes in the selling and distribution of milk, which must be from cows that have been tuberculin tested, and in the pasteurization of milk and cream. It also establishes classification in the grading of milk. No herd shall be considered tuberculosis free if the reaction to the test is more than 10 per cent of the entire herd. Following the signing of the ordinance by the mayor, May 25, an injunction was granted the Natural Milk Producers' Association, halting enforcement of it.

FLORIDA

State Board Elects.—Dr. Corbett E. Tumlin, Miami, was named president of the state board of medical examiners at a meeting, June 12, succeeding Dr. Carl A. Williams, St. Petersburg. Dr. Simeon E. Driskell, Jacksonville, was elected vice president, and Dr. William M. Rowlett, Tampa, reelected secretary. Dr. Nicholas A. Baltzell, Marianna, resigned from the board to become a member of the state board of health.

Society News.—At a meeting of the Dade County Medical Society, April 7, Dr. Taylor Lewis, Miami, among others, spoke on "Human Sterilization as a Eugenic Measure." Dr. Gerard Raap, Miami, addressed the society, May 5, on "Abnormalities of the Vertebral Bodies."—A symposium on obstetrics was conducted before the Duval County Medical Society, April 4, by Drs. James D. Pasco, Ferdinand Richards, Samuel R. Norris and Anasa D. Stollenwerck, all of Jacksonville.—Dr. John J. Kindred, DeLand, addressed the Volusia County Medical Society in DeLand, April 11, on mental diseases.—Dr. Jack Halton, Sarasota, was installed as president of the Florida Railway Surgeons Association at its annual meeting in Hollywood, May 1, and Dr. Walter C. Page, Cocoa, named president-elect.—Robert M. Yerkes, D.Sc., New Haven, Conn., addressed the Tuberculosis Association of Duval County, May 12, on "Primate Tuberculosis."—Dr. William C. Blake, Tampa, was elected president of the Florida Heart Association in Jacksonville, May 19, and Dr. George L. Cook, Tampa, secretary.—Speakers before recent meetings of the DeSoto-Hardee-Highlands County Medical Society at Sebring and Avon Park included Drs. Emory W. Bitzer, Tampa, and Merle C. Kayton, Wauchula, on essential hypertension and sinusitis, respectively.

GEORGIA

Donors of Medical Library Honored.—The donors of the A. W. Calhoun Medical Library, Atlanta, were honored at a dinner, May 31, at the Atlanta Athletic Club, commemorating the tenth anniversary of the founding of the library in memory of the late Dr. Abner W. Calhoun. The donors are Mesdames A. W. Calhoun, Stuart Witham, Junius Oglesby and Dr. F. Phinizy Calhoun. Dr. Stewart R. Roberts made an address on "The Books of Medicine and the Calhoun Library." The

library, which is maintained in Emory Hospital, contains about 16,000 volumes and served 24,000 readers last year.

Emory Alumni Clinics.—The Alumni Clinic Week of Emory University School of Medicine, Atlanta, was held, June 6-9, at Grady Hospital, in conjunction with the Georgia State Board of Health and the U. S. Public Health Service Clinic on Venereal Diseases. Surgical clinics were held each morning and afternoon and a program of lectures was in progress throughout the day. Among more than fifty lecturers were Drs. Stewart R. Roberts, on "Present-Day Views of Digitalis: Its Actions and Use in Heart Disease"; Frank Lee Bivings, "Infantile Eczema"; Allen H. Bunce, "Treatment of Secondary Anemia," and Mark S. Dougherty, Jr., "Cirrhosis of the Liver." Dr. Weldon E. Person was chairman of the program committee.

ILLINOIS

Appointments to State Department of Registration.—Mr. John J. Hallihan has been appointed director of the state department of registration and education, succeeding Mr. Michael F. Walsh, and Eugene R. Schwartz as superintendent of registration, replacing Mr. Paul B. Johnson. Mr. Stanley Kiflewsky, Chicago, succeeds Mr. J. E. Edwards as chief inspector.

Chicago

Annual Golf Prize.—On his retirement as president of the Chicago Medical Society, June 21, Dr. Herman L. Kretschmer presented a silver cup to the Chicago Medical Society to perpetuate the memory of Dr. J. Warren Vanderslice, who died, Dec. 24, 1932. The winner of an annual golf tournament will have his name inscribed on the cup and may keep it for one year. Physicians eligible for the competition will be the officers and trustees and past presidents of the Chicago Medical Society and members of the council and officers of the branches of the society. The game is to be played between the annual election and Labor Day and will be arranged by a committee consisting of the president-elect, secretary and three members of the council.

Dr. Hektoen Becomes Professor Emeritus.—Dr. Ludvig Hektoen retired as professor of pathology, Division of Biological Sciences, University of Chicago, July 1, becoming professor emeritus. Dr. Hektoen, who is 70 years of age, has been professor and head of the department of pathology at the university since 1901. From 1895 to 1898 he was professor of morbid anatomy at Rush Medical College. Since that time he has been professor of pathology at the college. He occupied a similar position with the College of Physicians and Surgeons of Chicago from 1892 to 1894. Dr. Hektoen has been director of the John McCormick Institute for Infectious Diseases since 1902 and editor of the *Journal of Infectious Diseases* since 1904 and of the *Archives of Pathology* since 1926. He was three times chairman of the division of medical sciences of the National Research Council. Societies of which he has been president include the Chicago Medical Society, 1919-1921; Chicago Pathological Society, 1898-1902; Association of American Pathologists and Bacteriologists, 1901; Society of American Bacteriologists, 1929; Society of Immunologists, 1927; Institute of Medicine of Chicago, 1929. In 1909 he was vice president of the American Association for the Advancement of Science and for several years has been chairman of the Committee on Scientific Research of the American Medical Association.

INDIANA

Personal.—Dr. Howard Willard Byrn, Terre Haute, received the Ravdin Medal, given each year to the member of the graduating class who has made the highest average through the four years of the medical course at the University of Indiana School of Medicine, Indianapolis. The medal is given by Dr. Marcus Ravdin, Evansville.

Gift to Library.—More than 600 medical books from the library of the late Dr. Lewis P. Drayer have been given to the library of St. Joseph's Hospital, Fort Wayne, by his daughter, Mrs. Scott Snyder. The gift increases the hospital's library to nearly 1,500 volumes, the majority of which have been donated recently by Fort Wayne physicians, newspapers reported.

Society News.—Dr. Harold M. Trusler, Indianapolis, addressed the Franklin-Fayette County Medical Society, June 13, on "Reconstruction of Burns and Scar Tissue."—Dr. Robert M. Moore, Indianapolis, was guest speaker at a recent meeting of the Carroll County Medical Society, Burlington, on "The Failing Heart."—The Gibson County Medical Society was addressed at Princeton, June 12, by Drs. Karl S. Strickland, Owensville, on "Diphtheria and Its Complications" and Martin L. Arthur, Patoka, "Differential Diagnosis of Scarlet Fever."

Dr. Harvey Appointed State Health Commissioner.—Dr. Verne K. Harvey, Indianapolis, has been appointed state health commissioner, succeeding Dr. John H. Hare, Indianapolis, newspapers reported. When the state board of health was recently replaced by an advisory committee, Dr. Hare was named executive secretary to carry on the executive work of the department, succeeding Dr. William F. King, who had been health commissioner since 1922. Dr. Harvey is 34 years of age and a 1929 graduate of the Indiana University School of Medicine, Indianapolis. He has been associated with the state board of health as epidemiologist. Dr. Hare will replace Dr. Charles E. Laughlin as superintendent of the Evansville State Hospital. The latter had occupied the position since 1903.

Anniversary of Medical Practice Observed.—Ninety-two photographs of physicians who had practiced in the county during the last hundred years were presented to the Wabash County Medical Society at its meeting in Wabash, June 7, by Dr. James T. Biggerstaff, who has been doing historical research for the society. These photographs were the only ones available of the 212 physicians who had practiced in the county during the century of medical practice, the anniversary of which was observed by the medical society at this meeting. The photographs are now hanging in the reception room at the Wabash County Hospital. Dr. John H. Reed, Logansport, made the presentation address on "The Valley of Vision of a Century of the Practitioners of Medicine and Surgery in Wabash County in 100 Years." The first medical practitioner located in Wabash County in May, 1833.

IOWA

Executive Secretary Appointed.—At the recent annual session of the Iowa State Medical Society, through an amendment to the by-laws, the position of executive secretary was created. Mrs. Dorothy McCarthy was appointed to the position for one year, beginning June 1.

Dinner to Dr. Bierring.—The Des Moines Academy of Medicine and Polk County Medical Society gave a banquet and reception in honor of Dr. Walter L. Bierring, Des Moines, President-Elect of the American Medical Association, June 26, at the Wakonda Club. Dr. Fred Moore served as toastmaster and addresses were made by Dr. Bierring and Major-Gen. Merritte W. Ireland, Washington, D. C., former surgeon general of the U. S. Army. Drs. Everett D. Plass, Iowa City, and Thomas F. Thornton, Waterloo, who with Dr. Moore were members of the House of Delegates at the Milwaukee session of the American Medical Association, attended the banquet.

Society News.—Dr. Thomas F. Suchomel, Cedar Rapids, was elected chairman of the Military Surgeons Club of the Iowa State Medical Society at its annual meeting, May 10.—Dr. Howard E. Campbell, Anita, gave a paper on "External Injuries to the Abdominal Viscera" before the Cass County Medical Society in Atlantic, May 16.—The Chickasaw County Medical Society heard Dr. Jesse Carl Painter, Dubuque, discuss "Childhood Types of Tuberculosis" at a meeting, recently, and Dr. Edward C. Nowak, New Hampton, "Eye Injuries."—Dr. Harold H. Webb, Ottumwa, was among the speakers before the Davis County Medical Society in Bloomfield, May 26; his subject was "Nontuberculous Conditions of the Chest."—A symposium on allergy was presented before the Woodbury County Medical Society, recently, by Drs. Louis J. Frank and Thomas R. Gittins, Sioux City. Dr. Joseph C. Ohlmacher, Vermilion, S. D., addressed the society, May 25, on kidney diseases.—A paper, prepared and read by Dr. J. D. Miles, Crawfordville, in September, 1874, was presented before the Tri-County Medical Society (Henry, Jefferson and Washington) by Dr. Clyde A. Boice, Washington; its title was "Compound Fracture of the Tibia and Fibula, Treated by the Antiseptic Method."—Dr. Daniel J. Glomset, Des Moines, addressed the Marshall County Medical Society, June 6, on nephritis.

KANSAS

Society News.—Dr. Arthur E. Hertzler, Halstead, addressed the Butler-Greenwood Counties Medical Society in El Dorado, May 12, on "Dysmenorrhea with Particular Relation to Endocrine Origin."—The Clay County Medical Society sponsored a clinic on skin diseases by Drs. Paul F. Stookey and Hubert Parker, Kansas City, Mo., May 10; in the evening, the physicians lectured on "Treatment of Syphilis" and "Pharmacology of Antisyphilitic Drugs," respectively.—Dr. Henry N. Tihen, Wichita, addressed the Sedgwick County Medical Society, May 16, on his observation of European practice, under the title of "Medical Medley."—At a meeting of the Shawnee County Medical Society, May 1, the speakers were Drs. Clar-

ence K. Schaffer, Topeka, on "Hemicranial Atrophy" and William C. Menninger, Topeka, "Role of Financial Losses in the Precipitation of Mental Illness."

MARYLAND

Personal.—The National University of Ireland, Dublin, conferred the honorary degree of doctor of science on Dr. Dean Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, recently.—Dr. Howard A. Kelly, emeritus professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, received the honorary degree of doctor of laws from Washington College, Chestertown, recently.

Spotted Fever.—Twenty-eight cases with five fatalities from spotted fever occurred in Maryland from the middle of May to the latter part of June. Ten cases were reported in Carroll County, seven in Anne Arundel County, two each in Dorchester and Somerset counties, and one each from Baltimore, Caroline, Frederick, Howard, Kent, Montgomery and Wicomico counties. Two deaths occurred in Carroll County, two in Anne Arundel County and one in Somerset County. Rocky Mountain spotted fever was first recognized in Maryland in 1929, when seven cases, diagnosed as typhus fever, were investigated. From 1930 to 1932, inclusive, 127 cases of spotted fever were reported to the state department of health, 104 with sixteen deaths from the counties, and 23 cases with five deaths from Baltimore. One of the deaths attributed to the counties occurred in Washington, but the disease was contracted in Maryland.

MICHIGAN

Veteran Physicians Guests of Honor.—Ten graduates of the Detroit College of Medicine and Surgery were guests of honor at the annual banquet and clinic, June 5, in recognition of their having spent fifty years in the practice of medicine. The honor guests of their alma mater were Drs. Charles G. Jennings, who received his degree in 1879; Hugo Erichsen, Birmingham, 1882; Walter J. Cree, 1883; Lewis E. Maire, 1881; B. C. H. Spencer, Rochester, 1881; John A. Wessinger, Ann Arbor, 1882; Hiram Holden, Trenton, 1883; John McKinlock, Chicago, 1883; William H. German, Chicago, 1883, and Stanley G. Miner, Detroit, 1882. The program of the alumni reunion consisted of clinics by Drs. George W. Crile, Cleveland, and Walter C. Alvarez, Rochester, Minn., on thyroid diseases and recent discoveries in the physiology of the gastrointestinal tract, respectively. Dr. Crile was the dinner speaker, on "Orthogenesis and the Power and Infirmities of Man."

NEBRASKA

Society News.—Drs. Samuel M. Hibbard and Arthur H. Haynes, Sabetha, Kan., addressed the Richardson County Medical Society, Falls City, May 18, on eclampsia and urinary infections of children, respectively.—Speakers at a meeting of the Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society, Newcastle, June 15, were Drs. John D. Lutton, Laurel, "Trichomonas Vaginalis Vaginitis"; Antonius A. Larsen, Homer, "Management of Obstetrics in the Home," and Paul F. Siman, Wayne, "Pneumonia."—Drs. Henry J. Lehnhoff, Lincoln, and Merton O. Arnold, St. Paul, addressed the Hall-Merrick-Howard County Medical Society, Grand Island, May 18, on "Pathologic Changes of the Myocardium" and "Renal Obstruction," respectively.

Creighton University News.—Faculty changes at Creighton University School of Medicine include six appointments and ten promotions. The appointment of Dr. Augustus G. Pohlman, former dean of the University of South Dakota School of Medicine, as professor and head of the department of anatomy, was noted in THE JOURNAL, June 10. The following others are announced: Drs. George K. Fair, Charles J. Fogarty, William J. Egan and William M. Dendinger, assistants in medicine, and John E. Courtney, assistant in surgery. Those who were promoted are:

Dr. James F. Kelly, professor of roentgenology and head of the department.

Dr. Arthur C. Johnson, assistant professor of surgery.

Dr. John F. Gardiner, assistant professor of medicine.

Dr. William H. Schmitz, assistant professor of urology.

Drs. Norman H. Atwood and Edward S. Maloney, instructors in medicine.

Dr. Maynard M. Greenberg, instructor in ophthalmology.

Dr. Clarence S. Moran, instructor in pathology.

Drs. Leo P. Coakley and Frederic M. Watke, instructors in otolaryngology.

A portrait of the late Dr. Hermann von W. Schulte, dean of the medical school from 1917 till his death in 1932, was presented recently to the university by the medical faculty. Dr. Bryan M. Riley, professor and head of the department of medicine, made the presentation speech and President Patrick

J. Mahan, S.J., the speech of acceptance for the university. The three upper classes in the medical school also presented a set of anatomic models as a memorial to Dr. Schulte.

NEW JERSEY

Personal.—Dr. Jesse B. Thompson, Atlantic City, recently entertained at dinner twenty alumni of the class of 1888 of the University of Pennsylvania School of Medicine.—Dr. William A. Pinkerton, Bayonne, was recently named head of the obstetric department of Bayonne Hospital.—Dr. Pellegrino A. D'Acerno, Union City, was elected president of the New Jersey Italian State Medical Society, at a meeting, May 26, in Newark.

NEW YORK

Dinner to Dr. Flaherty.—The Onondaga County Medical Society recently sponsored a testimonial dinner to Dr. Frederick H. Flaherty, Syracuse, in honor of his succession to the presidency of the Medical Society of the State of New York. Among speakers were Drs. Arthur J. Bedell, Albany, president-elect of the state society; Thomas P. Farmer, Syracuse, president of the county society; Thomas Parran, Jr., Albany, state health officer; Arthur W. Booth, Elmira, and Grant C. Madill, Ogdensburg, and Lorenz Brosnan, legal counsel for the state society.

New York City

Society News.—Dr. Ariel W. George, Boston, addressed the New York Roentgen Society, May 15, on "Medicolegal Expert Testimony as It Applies to the Roentgenologist."—Dr. Ronald T. Grant, London, England, addressed the section of medicine of the New York Academy of Medicine, in May, on "Prognosis of Heart Disease."—The International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists celebrated the fifth anniversary of its founding, May 21, at a reception at the home of the president, Dr. Jacob M. Gershberg.

A Million Children Immunized.—The immunization of the millionth child in New York against diphtheria was recently made the occasion of a celebration in Central Park, in which medical and health leaders and 5,000 school children took part. Dr. William H. Park, director of laboratories in the New York City Department of Health, immunized the millionth child at the Meinhard Memorial Health Center and Dr. Béla Schick, "the first of the second million." At the park celebration which followed, Mayor O'Brien, Health Commissioner Shirley W. Wynne and Drs. Park and Schick made addresses, after which children of various national groups presented folk dances. It was explained that from 1916, when diphtheria immunization was first made available in the United States, until 1929, only 260,000 children in the city had received the treatment. In the latter year the Diphtheria Prevention Commission began its intensive three-year campaign, at the end of which 522,063 more children had been treated. Since the dissolution of the committee the health department has continued the drive, which brought the total to a million. There remain about 700,000 unimmunized children in the city, the department reports. A similar celebration marking the immunization of the four hundred thousandth child in Brooklyn was held in Prospect Park, June 24, the climax of a four weeks drive.

Historic Petition Found at Columbia.—The petition that led to the establishment of the College of Physicians and Surgeons of Columbia University has recently been found, after having been lost for 165 years, the New York Times reports. The document with several others was discovered in an old chest in the rear of the vaults under the Columbia University Library. Five physicians signed the petition: Samuel Clossy, Peter Middleton, James Smith, John Jones and Samuel Bard, the latter of whom was dean and later president of the medical school. The petition was addressed to the governors of Kings College, Aug. 4, 1767, and the school opened November 2 of the same year. It was suspended during the Revolutionary War and was reestablished in 1784 as the Columbia School of Medicine, but active teaching was not carried on until 1791, according to the archives. In 1814 the Columbia school was merged with the College of Physicians and Surgeons, which had been established in 1807. The first course of lectures given at the school was described thus in the petition:

It is proposed to give a Course of Lectures in the Winter Season upon each of the following Branches of Medicine, viz.: Anatomy by Doct. Samuel Clossy; Physiology and Pathology by Doct. Peter Middleton; The Theory and Practice of Physick by Doct. Samuel Bard; The Theory of Chirurgery with a Course of Operations upon the Human body by Doct. John Jones; Chemistry by Doct. James Smith with the Materia Medica.

The founders asked no emoluments for their services but did ask that "these professorships shall at least have all that exterior Dignity, and every honorary Mark of Respect, which is in your Power to bestow."

NORTH DAKOTA

Society News.—Drs. Joseph G. Parsons and Chester L. Oppegaard, Crookston, Minn., were guests at the annual meeting of the North Dakota Academy of Ophthalmology and Otolaryngology in Valley City, June 1. They presented a discussion of "Block Anesthesia in Otolaryngology." Dr. Henry O. Ruud, Grand Forks, was elected president and Dr. Frederick L. Wicks, Valley City, secretary. The fall meeting will be held at Rochester, Minn., in conjunction with the South Dakota academy.

OHIO

Rating Service Extended to Private Practice.—A plan recently adopted by the Cleveland Academy of Medicine for investigation of the financial condition of patients unable to meet full charges for medical service has now been placed at the disposal of any member of the academy who wishes to send patients for ratings. The patient will pay a fee of 50 cents to the bureau of social service, which is under the direction of a trained worker. The development of social service as an adjunct to the private practice of medicine is said to be unprecedented. The bureau plans also to advise families in preparing budgets to allow for the exigencies of illness.

Society News.—Dr. Frederick R. Crowgey, Salem, addressed the Columbiana County Medical Society, Lisbon, July 11, on "Correlation of Surgery with Medicine."—Physicians of four counties attended a meeting sponsored by the Defiance County Medical Society, Wauseon, June 16, at which speakers were Drs. Howard R. Hartman, Rochester, Minn., on treatment of duodenal ulcer, and Charles Mayo, Rochester, chronic and acute intussusception, and J. Howard Brown, D.Sc., Baltimore, relation of milk to disease.—Dr. Frank W. Harrah, Columbus, addressed the Fayette County Medical Society, Washington Courthouse, June 1, on significance of abdominal pain.—Drs. Donald F. McGrath and Raymond C. King, Toledo, addressed the Auglaize County Medical Society, Minster, June 7, on "Analgesia and Anesthesia During Labor" and "Common Obstetrical Complications," respectively.—Dr. Louis Mark, Columbus, addressed the Belmont County Medical Society, Bellaire, June 1, on "The Role of Surgery in Tuberculosis."—Dr. John H. J. Upham, Columbus, addressed the Jefferson County Medical Society, Steubenville, May 26, on "Costs of Medical Care."

PENNSYLVANIA

An Exhibit of Hobbies.—The final meeting for the season of the Allegheny County Medical Society, Pittsburgh, June 20, was distinguished by an exhibit of the hobbies of members. Various types of art work were shown by Drs. Joseph H. Barach, Homer W. Grimm, Howard H. Permar, John G. Wurtz, John Chornyak, Warren A. Wolf and Walter E. Brown. Photography was displayed by Drs. Morris A. Hersenson and Daniel F. Jackson; collections of books and book-bindings by Drs. James D. Heard, Ralph V. Robinson, John A. Hagemann and Norman R. Goldsmith. Dr. James R. Johnston exhibited a collection of letters; Drs. Mortimer Cohen and John K. Musgrave, woodcraft; Drs. William J. McGregor and Daniel A. Atkinson, ballistic displays; Dr. Benjamin Levant, music; Dr. Harry C. Westervelt, antique glass; Dr. Victor W. Cowan, butterflies; Dr. Hagemann, unique walking sticks; Dr. William H. Gardner, monographs, and Dr. Johanna T. Baltrusaitis, minerals and petrified wood. Dr. Harry N. Malone displayed a post-revolutionary copy of "The Vermont Union" and sketches by Dr. Albert G. Walter, a famous Pittsburgh surgeon who died in 1876. On the formal program Dr. Thomas B. Carroll made a farewell address as outgoing president; Russell J. Ferguson, associate professor of history, University of Pittsburgh, discussed "Contributions of the Physician to the Social and Cultural Development of Society"; Rev. Clarence E. Macartney, pastor of the First Presbyterian Church of Pittsburgh, "St. Paul's Thorn in the Flesh and His Physician" and Dr. Theodore Diller, history of the society.

Philadelphia

H. K. Mulford Honored.—The Philadelphia College of Pharmacy and Science at its one hundred and eleventh commencement, June 7, conferred the honorary degree of master in pharmacy (honoris causa) on Henry K. Mulford, director of biological and research laboratories of the National Drug Company, Philadelphia. Mr. Mulford was the founder and for many years directing head of the H. K. Mulford Company and is now president of the Mulford Colloid Laboratories in addition to his connection with the National Drug Company. He was graduated from the Philadelphia College of Pharmacy and Science in 1887.

TENNESSEE

Society News.—Dr. George W. Crile, Cleveland, addressed the Davidson County Medical Society, Nashville, May 19, on "Diseases Peculiar to Civilized Men."—Dr. John Henry Schroder, Cincinnati, spoke on "Clinical Aspects of Indigestion" before the Gibson County Medical Society, May 22, and Dr. Robert C. Derivaux, Nashville, "Heart and Blood Vessels in Diabetes."—Dr. James M. Waters, Walland, addressed the Blount County Medical Society, June 27, on "Heredity Versus Environment."—Dr. Richmond McKinney, Memphis, presented a paper on "Treatment of Malignant Disease of the Tonsils by Radium and X-Rays" and Drs. Russell A. Hennessey and Alfred D. Mason, Jr., one on "Traumatic Injuries of the Urinary Tract," before the Memphis and Shelby County Medical Society, June 6.—Dr. James M. J. Vandegriff, Fountain City, addressed the Knox County Medical Society, Knoxville, June 20, on "Trench Mouth."—The Washington County Medical Society held a special meeting, June 1, in Johnson City, marking the thirtieth anniversary of the granting of its charter. Dr. Joe T. Smith, Knoxville, was the guest speaker, giving an address on the thymus gland. Drs. Edwin A. Long and William J. Matthews, Johnson City, reviewed the society's history.

TEXAS

Personal.—Dr. Joseph Herbert Page, Houston, has been named full time health officer of Harris County.—Dr. Ellen D. Furey has accepted a position on the teaching staff of the department of pathology of the University of Minnesota School of Medicine, Minneapolis, it is reported. She recently resigned as adjunct professor of pathology at the University of Texas School of Medicine, Galveston, to do graduate work at Minnesota.

Gift to Medical School.—A collection of the late Dr. N. N. Allen, an early professor of surgery at the state medical college at Galveston, was recently presented to the institution by the physician's daughter, Mrs. George Osborne, Hempstead. The collection, which includes books, photographs and letters, will be used in writing a history of the college and of medicine during the early days of Texas, newspapers reported. Dr. Allen served as professor of surgery at the medical school both while it was a part of Soule College of Chapel Hill and after it became a part of the University of Texas.

Society News.—Dr. John A. McIntosh, San Antonio, was elected president of the Texas Neurological Society at the annual meeting in Fort Worth; Dr. Everett C. Fox, Dallas, of the Texas Dermatological Society; Dr. Clark A. Wilcox, Wichita Falls, of the Texas Radiological Society and Dr. William A. Lee, Denison, of the Texas Railway Surgeons' Association.—The Lamb County Medical Society was recently formed at a meeting in Littlefield, with Drs. James R. Coen and John G. Little, both of Littlefield, as president and secretary, respectively.—The North Plains Medical Society, composed of Sherman, Moore, Dallam and Hartley counties, was recently organized with Dr. Evans P. Stewart, Stratford, as president, and Dr. Victor R. Moore, Dalhart, secretary.

Health at San Antonio.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million for the week ended July 1 indicate that the highest mortality rate (18.3) appears for San Antonio and the rate for the group of cities as a whole, 10.2. The mortality rate for San Antonio for the corresponding period last year was 10.6 and for the group of cities, 10.1. The annual rate for eighty-five cities for the twenty-six weeks of 1933 was 11.5, as against a rate of 12 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

WASHINGTON

Personal.—Dr. John S. McBride has been reappointed health commissioner of Seattle for a term of five years; he completed the unexpired term of Dr. Ernest T. Hanley.—Dr. Harry Eugene Allen, Seattle, has been appointed chief medical adviser to the state department of labor and industries.—Dr. Elmer Hill, Walla Walla, has been appointed physician to the state penitentiary.—Dr. Erval R. Coffey of the U. S. Public Health Service has been appointed secretary of the state department of health by Governor Martin.—Dr. William N. Keller, Tacoma, has succeeded Dr. Charles E. Taylor as superintendent of the Western Washington State Hospital, Fort Steilacoom. He occupied the position from 1914 to 1922.

WYOMING

Tri-State Meeting Postponed.—A joint meeting of the state medical societies of Wyoming, Utah and Idaho, which was to have been held at Yellowstone Park, August 6-8, has been postponed till 1934. Wyoming will have no state meeting this year. The present officers will continue until the next annual meeting of the association.

GENERAL

Results of Special Examinations.—Forty applicants passed the examination of the American Board of Obstetrics and Gynecology held at the Milwaukee General Hospital, Milwaukee, June 13. Three were conditioned and one failed.

Detroit Wins Health Conservation Award.—Detroit won first prize for health conservation among cities of more than 500,000 population in the annual health conservation contest conducted by the United States Chamber of Commerce. Winners in other population groups were: Cincinnati, cities from 250,000 to 500,000; Syracuse, N. Y., and New Haven, Conn., tied among cities from 100,000 to 250,000; East Orange, N. J., 50,000 to 100,000; Brookline, Mass., 20,000 to 50,000, and Lodi, Calif., under 20,000.

Visit to French Spas.—One hundred American physicians have been invited to visit French thermal and climatic resorts as guests of the French government, July 21 to August 23. The number includes wives of members of the party. The group will have a private train at its disposal in France and is to be officially entertained in the various spas. Information may be obtained from Dr. David J. Kaliski, 70 East Eighty-Third Street, New York, who will be in charge of the party, which will leave New York, July 21, on the S. S. *Lafayette* and leave Le Havre for New York on the S. S. *Paris*, August 23.

Warning Against Impostor.—Complaints have recently reached the Better Business Bureau of St. Louis concerning a woman named Alice Bell, who claims to sell professional uniforms. She says she represents the Wear-Well Manufacturing Company, 1717 Olive Street, St. Louis, and collects down payments for uniforms which are never delivered. Investigation revealed that no such firm is known at the address given. The woman is reported to be between 35 and 40 years old, about 5 feet 6 inches tall and a brunette with brownish gray eyes. One report stated that she wore Oxford type eye glasses of white gold and that she has poor teeth. She tells the physician that she is not working on commission and it makes no difference whether her orders are large or small. It is reported that she may now be in Washington or Oregon.

Health Authorities Elect.—Dr. Frederick D. Stricker, Portland, Ore., state health officer and secretary of the Oregon State Medical Society, was elected president of the State and Provincial Health Authorities of North America at its forty-eighth annual conference in Washington, D. C., June 5-6. Dr. William Warwick, chief medical officer, Fredericton, New Brunswick, was made vice president, and Dr. Albert J. Chesley, state health officer of Minnesota, secretary, reelected. Dr. Edward H. Cary, Dallas, Texas, then President of the American Medical Association, was among the speakers on "Relations of the Private Physician to the Health Department," and Dr. Dean Lewis, Baltimore, then President-Elect of the Association, "The Attitude of the Medical Profession Toward the Rural Health Unit," and Surg. Gen. Robert U. Patterson, U. S. Army, "Army Responsibility for Civilian Conservation Corps." Following this meeting was the conference of state and territorial health officers with the U. S. Public Health Service. Speakers included Drs. Goldsborough F. McGinnes, Richmond, on "Recent Diphtheria Studies in Virginia," and Allen W. Freeman, Baltimore, "A Plan for Tuberculosis Control."

Bequests and Donations.—The following bequests and donations have recently been announced:

River Crest Preventorium of the Kensington Dispensary for Treatment of Tuberculosis, Philadelphia, will eventually receive \$105,000 from the estate of Oscar L. Long.

Methodist Episcopal Hospital, \$40,000; St. Vincent's Hospital, \$2,000, and the James Whitcomb Riley Hospital for Children, the residue of the estate after a number of other bequests have been made, by the will of Edmund Zoller; all the institutions are in Indianapolis.

Montefiore, Mount Sinai and Beth Israel hospitals, New York, \$7,500 each by the will of the late Isaac Marks, Mount Vernon, N. Y., and Lebanon Hospital and the New York Dispensary, \$5,000 each.

Episcopal Hospital and American Oncologic Hospital, Philadelphia, \$3,000 and \$2,000, respectively, by the will of Catherine B. Davis.

Presbyterian Hospital, Philadelphia, \$5,000 for an endowed bed, under the will of Mrs. Elizabeth W. Hildeburn.

St. Luke's and Roosevelt hospitals, New York, \$10,000 each to establish free beds for "persons of gentle birth" who cannot afford hospital care.

Nassau Hospital, Mineola, L. I., \$150,000 by the will of the late Ormond G. Smith.
 Northern Dispensary, New York, \$5,000 by the will of the late Col. Robert Lewis Harrison.
 Lenox Hill Hospital, New York, \$20,000, by the will of Rudolf A. Metz and \$25,000 by the will of Mrs. Anna Woerishoffer.
 St. Mary's, Brownsville and East New York, Beth Moses and Israel Zion hospitals, \$2,500 each; Jewish Hospital, \$5,000 by the will of Alois Lazansky. All the institutions are in Brooklyn.
 Children's Memorial Hospital, Chicago, \$10,000 from the estate of Mrs. Clara F. Bass.
 Grant Hospital, Chicago, \$10,000 from the estate of Mrs. Helen Moeng.
 Highland Park Hospital, Highland Park, Ill., \$25,000 from the estate of H. H. Hitchcock.
 Good Samaritan Hospital, Lexington, Ky., \$250,000 from the estate of H. L. Ott.
 New Haven Hospital, New Haven, Conn., \$75,000 from the estate of Temple.
 Mrs. Etta Almer.
 Mount Sinai Hospital, New York Homeopathic Medical College and Flower Hospital, Hospital for Joint Diseases, all of New York, \$5,000 each under the will of Leah J. Simpson.
 Stuyvesant Square Hospital, New York, \$200,000 by the will of William Halls, Jr.
 Pottsville and Good Samaritan hospitals, both of Pottsville, Pa., each \$5,000 by the will of the late Samuel Rowland, Schuylkill Haven, Pa.
 James Whitcomb Riley Hospital, Indianapolis, \$4,200 by the will of Kate S. Parker, and \$5,000 by the will of Susan D. Forst.
 Pekin Public Hospital, Pekin, Ill., \$5,000 from the estate of Mrs. Mary Van Orstrand.
 St. Vincent's Hospital, New York, \$65,000 from the estate of Miss Margaret Crane Hurlburt.

FOREIGN

Liverpool Limits Enrolment.—The dean of the Faculty of Medicine of the University of Liverpool, England, has informed the American Medical Association that there are no vacancies for foreign students. In addition, the dean stated that the number of local students would be limited.

Medicolegal Journal.—The *Medico-Legal and Criminological Review* has recently appeared as the official organ of the Medico-Legal Society of London. It will publish quarterly transactions of the society, original articles, abstracts, proceedings of foreign societies, reviews of books dealing with forensic medicine and criminology, and correspondence. Dr. Gerald M. J. Slot and Mr. Everard Dickson are joint editors.

New Hospital in North China.—The *Chinese Medical Journal* reports the opening of a new hospital at Wutueifu in north Shantung by the United Methodist Mission. The hospital has seventy beds and with its modern equipment, much of which was an innovation in the district, cost \$75,000 in local currency. It is about eighty miles in several directions from the nearest hospitals and members of its staff are the only physicians, with one exception, for the 3,000,000 or more inhabitants in the area served by the new institution.

Medal Awarded.—Dr. Saul Adler, professor of parasitology at the Hebrew University in Jerusalem, received the Chalmers Gold Medal of the Royal Society of Tropical Medicine and Hygiene of England, at a meeting of the society's council, June 15, according to the *New York Times*. The honor was given to Dr. Adler in recognition of his work as director of the kala-azar commission sponsored by the society and the university in 1930-1932 in Italy and Malta. He recently received the Laveran Medal of the Société de Pathologie Exotique of France for the same work. A graduate of Leeds University, England, Dr. Adler was engaged in research at Sierra Leone, Africa, before going to Hebrew University in 1924.

Personal.—Dr. Edwin Matthew, Edinburgh, was recently elected to represent the Royal College of Physicians of Edinburgh on the General Council of Medical Education and Registration of the United Kingdom for a term of five years.—Dr. Edward Mellanby has resigned from the chair of pharmacology at University of Sheffield to accept the Sheld chair of pharmacology in the University of Cambridge.—Dr. Alban Köhler, Wiesbaden, Germany, received the Rieder Gold Medal of the German Roentgen Society at its meeting in April. The medal has been awarded previously to the late Guido Holzknecht, Vienna, and Gösta Forssell, Stockholm.—Dr. Geoffrey Hadfield, pathologist of the Royal Free Hospital in London, has been appointed to the chair of pathology at the University of Bristol to succeed Prof. I. Walker Hall.—Dr. Wilhelm His, University of Berlin, received the Carl Ludwig Medal for 1933. The medal is awarded every year by the German Society for Cardiac Research for outstanding services in research on the circulation.

Deaths in Other Countries

Juliano Moreira, general director of the Psychiatric Institute of Rio de Janeiro; founder and permanent president of the Brazilian Society of Psychiatry, Neurology and Legal Medicine; honorary member of scientific societies in many parts of the world; delegate from Brazil to numerous international medical congresses; died, May 2; aged 60.

Government Services

Physicians in Conservation Camps

Nine hundred and fifty-nine physicians have been assigned to the work of rendering medical care and treatment to 240,514 men in the Civilian Conservation Forestry Camps and Army Reconditioning Camps. The number includes 472 members of the Medical Reserve Corps, 126 army medical officers, 203 naval medical officers, 82 physicians on full time contract basis and 76 on part time contract. Officials of the War Department estimate that 200 more physicians will be required as soon as a total of 300,000 men in camps has been reached. Nine hundred camps are now in operation out of a total of 1,639 planned. Officers of the Medical Reserve Corps with the rank of lieutenant or captain and other physicians desiring such service should make application to the commanding general of the corps area in which they live. Below is a list of corps areas and states included in each:

First Corps Area.—Headquarters, Army Base, Boston 9, Mass. States included: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.
Second Corps Area.—Headquarters, Governors Island, New York. States included: New Jersey, Delaware and New York.
Third Corps Area.—Headquarters, U. S. Postoffice and Court House, Baltimore, Md. States included: Pennsylvania, Maryland, Virginia and the District of Columbia.
Fourth Corps Area.—Headquarters, Fort McPherson, Georgia. States included: North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana.
Fifth Corps Area.—Headquarters, Fort Hayes, Columbus, Ohio. States included: Ohio, West Virginia, Indiana and Kentucky.
Sixth Corps Area.—Headquarters, 1819 West Pershing Road, Chicago, Ill. States included: Illinois, Michigan, Wisconsin, Post of Jefferson Barracks, Missouri, and Arcadia Target Range, Arcadia, Mo.
Seventh Corps Area.—Headquarters, Baird Building, Omaha, Neb. States included: Missouri, Kansas, Arkansas, Iowa, Nebraska, Minnesota, North Dakota and South Dakota.
Eighth Corps Area.—Headquarters, Fort Sam Houston, San Antonio, Texas. States included: Texas, Oklahoma, Colorado, New Mexico, Wyoming and parts of Arizona.
Ninth Corps Area.—Headquarters, Presidio of San Francisco, Calif. States included: Washington, Oregon, Idaho, Montana, Utah, Nevada, California and portion of Arizona.

Army Personals

Lieut. Col. Charles W. Haverkamp, Fitzsimons General Hospital, will proceed to his home and await retirement, for the convenience of the government.

Major Michael G. Healy, relieved at the School of Aviation Medicine, Randolph Field, Texas, and assigned for duty in the Hawaiian Department.

Major Patrick F. McGuire, Fort Sam Houston, Texas, will proceed to his home and await retirement, for the convenience of the government.

Col. Levy M. Hathaway, ordered to proceed to his home to await retirement, for the convenience of the government.

Col. Harold W. Jones, relieved at Fort Sam Houston, Texas, and assigned to the Hawaiian Department.

Col. Edward B. Vedder was to proceed to his home about June 22 to await retirement, for the convenience of the government.

Lieut. Col. Guy V. Rukke, having been found disqualified for the duties of a colonel in the medical corps by reason of disability incident to the service, his retirement with the rank of colonel is announced.

Major Francis W. Gusties, on completion of his present tour of foreign service in the Canal Zone, is assigned to Fort Bragg, N. C.

Major John C. Woodland, on completion of his present tour of service in the Canal Zone, is assigned to Army and Navy General Hospital, Hot Springs National Park, Ark.

New Editor of Naval Journal

Commander Louis H. Roddis, U. S. Navy Medical Corps, has been ordered to the Bureau of Medicine and Surgery to take charge of the division of publications, succeeding Lieut. Comdr. John Harper. In this capacity he will be editor of the *Naval Medical Bulletin*.

Change of Station in the Navy

Capt. John F. Murphy, from command of Navy Hospital, Charleston, S. C., to Navy Yard, Philadelphia.

Lieut. Comdr. Martin Donelson, from Navy Hospital, Great Lakes, to U. S. S. *Lexington*.

Lieut. Comdr. Lewis W. Johnson, from Navy Hospital, Great Lakes, Ill., to U. S. S. *Louisville*.

Lieut. Comdr. James B. Moloney, from U. S. S. *Louisville*, to Navy Hospital, Mare Island.

Lieut. Comdr. William P. Mull, from U. S. S. *Mississippi* to Navy Dispensary, Washington, D. C.

Lieut. David O. Zearbaugh, from U. S. S. *Patoka* to U. S. S. *Arizona*.

Comdr. William E. Eaton, from U. S. S. *Lexington* to Naval Hospital, Newport, R. I.

Comdr. Carleton I. Wood, from Naval Hospital, Great Lakes, Ill., to U. S. S. *Mississippi*.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 24, 1933.

Is Health Insurance Becoming a Dole?

In his presidential address to the Section of Preventive Medicine, Sir Henry Brackenbury, chairman of the council of the British Medical Association, asked: "Is it possible that the national health insurance scheme is becoming not primarily a method of securing medical advice for the insured but primarily a machine for doling out to them small sums of money week by week or month by month?" "Today, more than ever," said Sir Henry, "I find public attention concentrated on the cash benefits which may be claimed rather than on the medical attention. To a not inconsiderable degree the national health insurance system is in danger of becoming a gigantic machine for the distribution of shillings and only secondarily a beneficent medical service. I suggest that it is necessary and that it is time that these two aspects of the scheme should be separated." The insurance scheme was intended to make provision for medical attention for all manual workers and the less highly paid nonmanual workers but, owing to unemployment and the consequent failure of the necessary contributions from employer and employed, a steadily increasing number of workers is passing out of the scheme. "Must we not be concerned whether national health insurance is not beginning to fail in its national purpose?" he asked. "I suggest that when growing out of the national health insurance scheme there is developed a general medical service for the nation, it will be essential, and by no means difficult, to provide for the inclusion of those who are no longer able to make any individual contribution."

In previous letters the demand by socialists for "a general medical service" for all, which would be free and include every form of medical treatment, private, special and hospital, has been described. There was great danger of complete socialization of the profession when the socialist government held office. But Sir Henry Brackenbury evidently refers to the scheme brought forward by the British Medical Association, which did preserve some features of private practice and was suggested in order to avoid something worse. The position was discussed in *THE JOURNAL*, April 8, page 1120. The great defect of the national health insurance act is that it is socialistic and therefore manifests the viciousness inherent in all socialism. The selfishness of human nature is the rock on which the finance of all socialistic schemes breaks. There is no efficient check on the unemployed, who by means of exaggerating trivial complaints can convert insurance benefit into a dole. Sometime ago the ministry of health had to complain that the finances of the insurance system were endangered. Even without embarking on "the general medical service" it is probable that this country, the prosperity of which has been seriously impaired by over-taxation for socialistic purposes, will have to find more money for medical socialism. Similarly to the abuse of health insurance, but to a much more serious extent, insurance against unemployment has largely become a dole, which is burdening struggling industries and so producing more unemployment—the vicious circle of socialism.

Payment for Treatment of Accident Cases

In the house of lords, Lord Moynihan moved the second reading of the road traffic emergency treatment bill. He said that the physicians who rendered first aid in automobile accidents received in a large number of cases neither acknowledgment of their services nor payment. The cost to them of rendering this treatment was considerable. He hoped that it was not neces-

sary to remind the house of lords of the immense amount of gratuitous service rendered by physicians in this country. About 60 per cent of the work he had done during his own professional life had been unrewarded, and he was in no way exceptional in that. The medical profession was unanimous as to the injustice done to physicians who rendered emergency treatment. It was estimated that there were 35,000 cases of emergency treatment given in the outpatient departments of hospitals during the year at a cost of \$60,000. Not a cent of that sum was returned to the hospitals. The bill proposed that the maximum fee payable for treatment should be \$15. There were 2,800,000 automobile licenses issued in the country today and if 50 cents was added either to the premium charged by the insurance companies or to the price of the driver's license a sum more than sufficient, even including administrative expenses, would be available for the payments he was asking. The objection to payment of the physician and the hospital from funds so derived could be due only to prejudice, and prejudice here, as so often in other directions, was only the emotional reaction of ignorance to truth.

A large number of lords supported the measure. The bill was read a second time. The Earl of Plymouth then moved that it be referred to the same select committee to which the road accidents compensation bill already stood referred and that Lord Moynihan be added to the committee. The motion was agreed to.

Population of England About to Decline

The momentous fact that after extraordinary expansion in the past century the population of England is rapidly approaching a maximum and then an inevitable decline has attracted little notice. The fact that an increase is still going on shuts people's eyes to the fact that the present birth rate is insufficient to maintain the present population in future years. At the congress of the Royal Sanitary Institute, Prof. A. M. Carr-Saunders, a statistician, pointed out that the population of this country will cease to increase in 1940, and possibly before then, and will subsequently decline. He said that since the Domesday survey, at the end of the eleventh century, estimates for every succeeding century showed increases interrupted only by temporary catastrophes. It can be proved that the death rate will presently exceed the birth rate, and that the population will begin to decrease without any further decline in the fertility of married women—that is to say, in the size of the family. There is no longer "a replacement birth rate." The number of children born within the last five years, who in twenty years should form the 20-25 years age group, does not equal the number now in that group. Moreover, some of them will die before reaching the age of 20. The important point is that the population will cease to increase and will then decline, even if there is no further decrease in the size of the family. But the size of the family decreases every year. If emigration were again to attain its pre-1929 level, a decline would set in before 1940. Emigration on this level from 1929 to 1940 would mean a drop of population by a million at the end of that period. Professor Carr-Saunders complained that there is a complete failure to appreciate the situation. He has seen plans which visualize a population during the next half century arrived at by projecting the continuance of the growth of the last fifty years. In one case a large expenditure has been incurred to supply water for a population that will never exist.

Blood Transfusion in London

At the annual congress of the Royal Institute of Public Health a discussion took place on blood transfusion. In London about 400 members are newly enrolled annually in the Red Cross Transfusion Service and 250 are lost, of which 80 per cent are due to pressure by relatives, colleagues and employers. By extolling the donor as a hero, the press did the service much

harm. Mr. Geoffrey Keynes said that the discovery that sodium citrate was an anticoagulant and nontoxic led to the adoption of transfusion as a common therapeutic measure. It was still the method of choice after twenty years' use. Although the citrate was baled for rigors, it was admitted that some patients had them no matter what method of transfusion was used. Rigors might be minimized by not allowing the blood to fall below body temperature and by injecting slowly; it should take half an hour to inject 600 cc. The blood group of every donor should be determined every year or two to make certain that it did not alter. The direct test should be made between the donor's blood and the patient's serum wherever practicable. Universal donors should not be called on indiscriminately for patients of all groups, or the supply of them would be exhausted. Except in great urgency, hospitals or individuals using the service should group the blood of the patient before asking for the donor.

Dr. H. F. Brewer had found males and females between the ages of 18 and 65 acceptable as donors. He regarded any old tuberculous disorder as a contraindication. The hemoglobin of a city dweller should not be below 94 per cent. A blood Wassermann test should be made as a routine, and malaria should be excluded. Protein-sensitive persons, such as those subject to asthma, hay fever or urticaria, were not suitable. Donation by a menstruating woman was not injurious, provided the period was normal. The minimum safe interval between donations of an average quantity of blood (from 400 to 700 cc.) appeared to be three months for men and four months for women. Donors should not resume the upright position for at least an hour after service. Any lag in the recovery of the hemoglobin figure, which usually took from seven to fourteen days, was best treated by administration of iron and occasionally by addition of liver and kidney to the diet.

Condition of the Masses in Great Britain

In the discussion at the International Labor Conference, held at Geneva, on the proposal for a forty-hour week in industry Sir James Lithgow (representative of the employers of Great Britain) gave some remarkable facts on the condition of the masses in Great Britain, in spite of the prolonged industrial depression. He knew from personal contact with public officials, physicians and other social workers that, tragic as was the moral aspect of unemployment, none of the unemployed were in a state even bordering on actual want. An unemployed worker of average family responsibilities had today at least as much purchasing power as had the unskilled worker in full employment twenty years ago. Put otherwise, he was receiving today as much money as the unskilled worker in full employment in other countries who was his industrial competitor. Sir James Lithgow did not mention that this was possible only because of taxation so severe as to be unprecedented in this country and never known in any country, or that taxation had now reached and even passed its limit, the well-to-do being so taxed that they are gradually disappearing and, what is worse, the capital of the country being encroached on.

The British Medical Association and Ship Surgeons

The Medico-Political Committee of the British Medical Association has had the interests of ship surgeons under consideration since last October, when a subcommittee was appointed to go into the matter. It has now presented its report, which shows that the rates of pay for surgeons with the smaller companies varies from \$90 to \$110 a month, the pay ceasing on completion of the voyage. The surgeons are permitted private practice among the passengers and are allowed to charge fees on a prescribed scale. On one important line, passengers pay \$1.25 per visit, and the largest amount chargeable to a passenger during a voyage, save in exceptional cases, is \$75. Representations have been made to the subcommittee that the

pay is unduly low, but regard has to be paid to the facts that shipping is depressed and that the companies have no difficulty in securing surgeons, some of whom engage for reasons of health or for change of scene. It is therefore considered that this is not a propitious time to make representations as to the rate of pay. Another matter considered is that the captain has power to require the surgeon to submit his private accounts before presenting them to patients. It had been contended that this was undignified. But it has to be recognized that the captain is in full legal control of all matters connected with the ship while at sea. Although the subcommittee agreed that the practice was undesirable, no specific example of hardship had been brought to its notice. It was therefore recommended that no action be taken on this matter at present. It was agreed that the possibility should be explored of securing the addition of a representative of ship surgeons to the National Maritime Board, a statutory body which regulates the pay and conditions of service of those afloat. Heretofore all grades of shipping employees except ship surgeons have been represented on it.

PARIS

(From Our Regular Correspondent)

May 31, 1933.

The Economic Crisis and Physicians

The economic crisis is resting heavily, throughout France, on the medical profession. The unemployment aid given to workmen is not applicable to members of the liberal professions (physicians, lawyers, artists), their fate, in the eyes of a government impregnated with socialism, being regarded as much less important than that of manual workers. As a result, misery and want have entered the homes of many physicians, especially those who have children. The sanatoriums, which, up to 1931, were filled with patients, are half empty. The economic crisis, as affecting the physicians, is due to many causes. First there is an excess of physicians in France, as in all other civilized countries. To this may be added the effects of demagogic laws, which, in the name of a philanthropy for which the public shows its gratitude only toward the deputies who voted for them, bear heavily on the physicians by placing the medical care of an increasing number of inhabitants in charge of the state, which grants a ridiculously low fee to the physicians who treat them. Finally there is strong competition from the foreign physicians practicing in France, with the result that the country can no longer assure French physicians a respectable living. In spite of the laws, France is still the country in which a foreign physician can most easily establish himself by defying the regulations. However, the minister of public health has decided to undertake a revision of the diplomas of dentists and of doctors of medicine, which must be deposited at the prefecture of each department by their holders in order to acquire the right to practice. Despite the register containing the names of those authorized to practice, there are a great many irregularities. Many irregular diplomas have been registered by incompetent employees. Many foreign physicians establish themselves by merely placing a physician's sign on their door without offering to deposit their diploma, which would no doubt not be accepted, and a long time elapses before such a situation is revealed, in spite of the vigilance of the medical syndicates. Hence a ministerial decree has announced that a revision of all registrations of diplomas is to be made. Only the physicians who hold a diploma of a French faculty of medicine are relieved of this duty. The holders of foreign diplomas must present themselves at the prefecture of the department in which they practice and exhibit their diploma. Later the owners of houses in which any physician is practicing must supply the prefecture with a list of the names. Physicians who are practicing medicine under illegal conditions can be expelled from the country.

The question has been recently brought sharply to the fore as a result of measures adopted in Germany against the Jews, most of those who had to leave their country having taken refuge in France. Among these immigrants are many eminent Jewish physicians. A professorial chair has been created at the Collège de France for the eminent mathematician Einstein, but it is impossible for France to repeat too often this generous gesture. It is impossible to accord to Jewish physicians from Germany the right to practice in France, for that right is denied in Germany to the holders of a French diploma. The medical journals contain many advertisements of Jewish physicians from Germany offering their services as assistants in the laboratories. They are not meeting with success. The situation of these unfortunate men is pitiable. Some of them are accepting work as low-salaried employees, while their wives are, in some instances, serving as domestics.

Inconveniences Due to Electrotherapeutic Apparatus

The installation of an electrotherapeutic cabinet in a building in which there are several renters, as often happens in large cities, may expose the practitioner to formal complaints lodged against him in the courts, by his neighbors. In several instances, neighbors have contended that rays emanating from radiologic apparatus passed through the walls and caused various disorders. The courts ordered inquiries made and then required the radiologists to enclose their cabinets in a booth with thick walls covered with sheets of lead. Now the devotees of wireless telephony complain that high frequency apparatus emits waves that disturb their radiotelephonic transmissions. At Amiens, a dealer in apparatus used in wireless telegraphy brought suit against a physician, alleging that, in giving diathermic treatments, he disturbed the wireless apparatus that he displayed to customers. Similar observations have been made about the electric plants located in the center of cities. These plants, however, are too important to close down to suit the pleasure of listeners-in on the radio. Greater severity, however, is being shown, as usual, toward the physicians, and the court of Amiens ordered the electrotherapeutist to take such action as was necessary to prevent the business of the dealer in wireless apparatus from being disturbed. The physician found it next to impossible to prevent such disturbance, so he was ordered to change his consultation hours.

The Eighty-Second Birthday of Professor d'Arsonval

Ceremonies were held in Paris, May 27-28, to celebrate the eighty-second birthday of Professor d'Arsonval. A reception was organized at the Hôtel-de-Ville by the municipal council, and a special session was held in the Great Hall of the Sorbonne, which was attended by the president of the republic and government officials. Addresses were delivered by delegates of the learned societies to which Professor d'Arsonval belongs or which were founded in application of his discoveries. Among the delegates was Professor Jelinek, who had come from Vienna for this purpose. The minister of public instruction presented the scientist with a large medal and in a charming speech traced his career of discoveries in electrophysics and biophysics, noting the industrial applications. The whole world is profiting today from the discoveries of d'Arsonval. The use of high frequency currents is often termed d'arsonvalization. Professor d'Arsonval responded to the eulogies with many witty allusions, in which he gave reminiscences of his childhood days. He said that he owed to Claude Bernard whatever measure of success he had attained and that the title of which he was most proud was that of préparator in the laboratory of the great physiologist. He praised a number of his pupils who had, he stated, outdistanced their master. He pointed to Mr. Georges Claude, who sat near him, and said "This man was my greatest discovery."

ITALY

(From Our Regular Correspondent)

April 30, 1933.

The National Council of Research

At its recent sessions, the Consiglio nazionale delle ricerche, presided over by Guglielmo Marconi, devoted itself to planning a program of research in biology, medicine and nutrition. It was decided that the committee on biology should organize a new biologic station for applied genetics, experimental embryology and the physiology of persons subjected to high pressures. The research will be distributed among various universities.

A special commission is dealing with the problems of alimantation. Investigations are under way to promote the knowledge of the chemical composition, the caloric value and the vitamin value of the foods produced in Italy. The basal metabolism of Italians according to age and sex is being studied. Research is being carried on to establish the alimentary requirements of children and adults, pregnant and nursing women, laborers and soldiers.

The committee on medicine will suspend for a year the epidemiologic studies on typhoid, since the practical application of the results secured are still experimental. The research on rheumatism will be developed, for this is an important problem.

The studies completed on ancylostomiasis have established, in addition to the existence of healthy carriers of *Ancylostoma*, also the possibility that the larvae may penetrate vegetable tissues and make certain vegetables vehicles of infection.

The Olympic committee will continue the research on athletes.

The program of the committee on medicine will include two new subjects; namely, an examination of the relation between bone changes and the parathyroids, and the research on the etiology of malaria, in which recent studies have postulated the existence of a filtrable form of specific parasites.

Bone Transplant in Vertebral Fractures

Fractures of the dorsolumbar and the lumbar vertebrae, with crushing of the vertebral bodies, often cause rigidity, pain and gibbosity. To prevent these sequels, Professor Pieri of Belluno has advised, since 1917, an operation consisting in the application of a bone transplant after the Albee method, as in the treatment of tuberculous spondylitis. In the last eight years, Professor Pieri has operated in eight cases of fracture of one or more vertebral bodies (from the twelfth dorsal to the third lumbar) with deformations. The operation was performed within not more than fifty days, at the most, of the trauma. The bone transplant was attached to the arches of the two healthy vertebrae above and of the two healthy vertebrae below the area of the fracture. Immobilization of the trunk in a plaster cast, for one month, followed. Then, for two months, an ordinary Sayre plaster corset was applied.

Dr. Di Prampero announced to the Società medico-chirurgica of Belluno the satisfactory results obtained in all the cases thus treated and presented two patients on whom he had operated, one operation dating back eight years.

Academy of Sciences of Apulia

The Accademia Pugliese di Scienze met recently at Bari under the chairmanship of Professor Gaifami of the University of Bari. Amoia announced the unusual finding of *Trichomonas vaginalis* in the male urethra. Only four such observations are reported in the literature. The speaker considered it premature to state whether *Trichomonas*, which is regarded by many as pathogenic in its more common localization (the vagina), is likewise pathogenic in the urethra—male or female. Attimonelli discussed the duration of immunity in persons who have had smallpox. Subjecting to smallpox vaccination ninety-four persons who contracted smallpox during the epi-

demic of 1919, he secured in 20 per cent of them the formation of a pustule, and in 16 per cent a papulovesicular reaction. In a few others he noted the formation of a small papule. The speaker raised the question as to whether all the persons who presented the positive vaccinal reaction had lost their immunity to smallpox, or whether the vaccinal reaction is to be regarded as an expression of cutaneous allergy.

The Riberi Prize

The Accademia di medicina di Turin has announced the conditions of competition for the fifteenth award of the Riberi prize, which amounts to 20,000 lire (\$1,150). Scientific work submitted must mark a distinct advance in medical knowledge. Both printed and typewritten works in Italian, Latin, French, English or German will be accepted. Printed works must have been published since 1927. If the prize is awarded to a typewritten work, it must be printed by the author within two years. The works must be sent to the Accademia di medicina di Turin not later than Dec. 31, 1934.

BUENOS AIRES

(From Our Regular Correspondent)

May 28, 1933.

Malaria in Cordoba

The health authorities of Cordoba recently observed about 500 cases of malaria in the rural districts of Rio Primero in Cordoba. They are conducting an antimalarial campaign, including an investigation of the possible endemicity of malaria, and various preventive measures.

High Mountain Climbing

In an editorial in *THE JOURNAL*, Dec. 24, 1932, page 2187, mention was made of a telegram from Berlin to the *New York Times* concerning the climbing of Mount Aconcagua, situated in the province of Mendoza in Argentina at 7,010 meters, by a German expeditionary group. Several previous attempts to climb Aconcagua were successful. Its top was reached by M. Zurbriggen in 1897, by Stuart Vines and Lanti in 1897, by R. Helbling in 1906, by F. Reichert in 1906 and by Macdonald, Ryan and Cochrane in 1925. The top of Tupungato at 6,650 meters was reached by Stuart Vines and Zurbriggen in 1897 and by Reichert in 1912. Dr. Reichert of the University of Buenos Aires has climbed several mountains in Argentina reaching altitudes of more than 5,000 meters. For his book, "La Exploración de la Alta Cordillera de Mendoza," published in 1930, Dr. Reichert was awarded the second National Prize of Sciences.

The National Congress of Surgery

The fifth National Congress of Surgery will meet at Buenos Aires next October under the presidency of Dr. Enrique Finochietto. The subjects to be discussed are treatment of acute intestinal obstruction, by Drs. Delfor del Valle of Buenos Aires, and D. Pratt of Montevideo; treatment of fractures of the elbow, by Drs. N. Tagliavache of Buenos Aires, and L. Rezende Puech of São Paulo, and surgery in diabetes, by Dr. Rodriguez Villegas. The committee on organization has its headquarters in the offices of the Asociación Médica Argentina, Santa Fé 1171, Buenos Aires.

Protests Against Pay Clinics

The hospitals attract people more and more and the outpatient departments, attended by famous specialists with numerous assistants, are frequented by a large number of patients. As this service is gratuitous, the poor and even the rich have come to use it. Physicians complain, with reason, that this system is wrong. They are ready to give gratuitous service to those who cannot pay (only chiefs of service receive a small salary) but they feel that free service should not be

extended to persons of means. Hospitals are based on the principle of charity to those who come without verification of their nationality or residence, or whether or not they pay taxes. This system has had consequences: 1. It obliges physicians to assist gratuitously persons of means. 2. It competes with the private practitioners. 3. The municipal budget is charged with assistance to foreigners. 4. The public becomes accustomed to the maintenance of medical services as an obligatory governmental function. 5. The municipal budgets are insufficient to cover the expenses. Many physicians pay the expenses of their wards out of their own pockets in amounts varying between 300 and 2,000 pesos a month.

The clinical hospital of the university has established a scale of fees. Poor patients, whose cases are required for teaching, may be assisted gratuitously, but the others have to pay for each outpatient consultation, for every day of assistance and for operations, according to a scale that takes into account their salary, their civil status and the number of their children. This tariff has produced about 20,000 pesos a month, 70 per cent of which was turned over to the hospital. Unfortunately, the university has decided that 80 per cent of the fees must be given to it. This makes it certain that the wards will be filled with patients who do not pay and that donations will again be solicited as was done until last year.

The system of fees has worked satisfactorily for several years in the hospitals depending on the associated charities, supported by the national government. The municipal council proposed to establish a scale of fees for the nonpoor who attend municipal hospitals. Unfortunately the socialist majority objected, saying that it was wrong to demand proofs of poverty and that medical service should be gratuitous and directed by the government.

Undoubtedly the majority of the population prefers to be attended to by a physician of its own choice, who will offer more leisurely and more individual attention. As long as people prefer better assistance, the medical profession does not run the danger of seeing itself transformed into a governmental bureaucracy or a bureaucracy of insurance companies and mutual aid societies, although the latter are increasing in importance at the cost of the physicians, of whom there are already about 8,000 in the country for the 11,500,000 inhabitants, and 600 graduate every year.

Committee to Study the Climate and Mineral Waters of Argentina

The house of representatives passed a bill for the appointment of a national committee to study and report on the therapeutic properties of the mineral springs and climatic resorts of Argentina. The members of the committee are Drs. M. Sussini, B. A. Houssay, E. Herrero Ducloux, M. Castillo, M. Brandam and H. Corti, and J. Galmarini.

Recognition of Foreign Diplomas

According to the law, physicians holding diplomas from foreign universities cannot practice medicine in Argentina. According to the terms of a treaty, the validity of diplomas from Uruguay, Paraguay and Bolivia is recognized, but at various times the government has been requested to abrogate this treaty. Foreign physicians must have their diploma validated, paying 4,000 pesos, and pass an examination on thirty-eight subjects. Argentine physicians graduated abroad have to take only examinations at medical, surgical and obstetric clinics. There is a law that has been objected to. According to this law the government may recognize the diploma and the right to practice of foreigners under contract with the national authorities. It has happened that foreigners under contract to teach pathologic anatomy, bacteriology, embryology, physical chemistry and so on have invoked this right on the termination of their contract and practice medicine; this privilege has even been given to a physician who had broken his con-

tract. A curious case is the recent one of Dr. Schlanger, an Austrian radiologist, who was authorized to practice because a professor from La Plata made him a demonstrator and because Dr. Finochietto, a surgeon, employed him as radiologist. Such cases have given rise to many protests, which will result in a request to rescind the law.

New Professors

Dr. Nicanor Palacios Costa has been nominated professor of obstetrics in the School of Midwives. At the Faculty of Medicine of La Plata, Dr. A. Errecart has been nominated titular professor of otorhinolaryngology, and Dr. Orestes Adorni of medical pathology. At the Faculty of Medicine of Buenos Aires, Dr. A. Caeiro has been nominated assistant professor of operative medicine, Dr. O. Adorni of medical pathology, Dr. O. Ivanissevich at the surgical clinic, and Dr. A. D. Marenzi of biologic chemistry; the latter has worked with Folin in Boston.

Prizes

The first national prize of sciences for 1930 (30,000 pesos) has been given to Drs. Solé and Piñero Sorondo for their work on gastric ulcer. The third prize (10,000 pesos) has been divided between Dr. A. Battro for his study on coronary occlusion and Dr. A. Salaber for his thesis on the embryology of the female genital apparatus. The prize for the best work in medicine during the years 1931-1932 was given to Dr. Diez for his work on surgery of the sympathetic system.

Personals

Dr. Pedro Rojas, who was given a scholarship by the Rockefeller Foundation to study in Brussels in 1931, has been appointed professor of History at the Faculty of Medicine of Buenos Aires.

Drs. F. R. Ruiz, C. Weskamp and P. Ferrazzini have been appointed professors of pathologic anatomy, ophthalmology and obstetrics, respectively, at the Faculty of Medicine of Rosario.

Drs. J. B. Señorans, Buenos Aires, Pierre Janet, Paris, and H. Rossello and E. Blanco Acevedo, Montevideo, have been appointed national and foreign honorary academicians, respectively, of the Academy of Medicine of Buenos Aires. Drs. H. García Lagos and P. Barcia, Montevideo, have been appointed foreign correspondents of the same academy.

JAPAN

(From Our Regular Correspondent)

May 15, 1933.

The Overproduction of Medical Graduates

Nineteen medical universities and eleven medical colleges have had 3,143 medical graduates this year. The deaths of physicians last year numbered 933, and those who gave up practice, 23. The real actual increase of physicians during the twelve months was 2,187, which is a record increase of physicians in this country. It is due to the sudden increase in the number of medical schools in 1928 as the after-effects of prosperous times. The first graduates came from the new schools this April. There was 1 physician to 1,297 people in 1930. The average annual increase of population for the five years following 1925 was 884,052, while the average increase of physicians was 891 for those years; that is, there was 1 physician to 1,078 of population. This year the proportion was greatly changed. If this increase in graduates continues, in ten years there will be 1 physician to every 500 people. Far sighted men are earnestly emphasizing the need of emigration to the continent, especially to the new republic of Manchukuo.

Periodic Medical Examinations

The relationship of physicians and the family has gradually changed. The physician formerly was truly a family physician. People ran to his door to consult about trouble, both physical

and mental. He was an adviser to the family. This custom is now seldom seen in this country. Dr. K. Miyajima, a well known medical expert, asks in the *Medical News*, What is the best way to regain the old confidence of the family in the physician? He says the only way is to establish periodic medical examination of all members of the family. Some intelligent people already feel the necessity of it, though the majority have to be awakened to this need. The good results of such an examination on the part of the patient are obvious. As for the physician, this examination will benefit him greatly, but it requires deliberate observation and attention in executing the examination. The examinee may be in good health, but the observations may be useful from the standpoint of statistical research. The examinations should start in infancy, if possible, or be made during the developing period twice a year. The physician should also learn the habits, pleasures and occupation of the examinee. Such knowledge of the patient is certain to establish the confidence of the sick person in the physician. He also says that the fee should be sufficient, for the examination requires much time, equipment and hard work.

"Uncaging" the Licensed Prostitute

The licensed prostitute in Japan has been confined to restricted districts since 1900, being prohibited from leaving those districts even for a walk without permission from the police station in charge. The police were not generous with their permits, unless unavoidable reasons were proved. This state of "caged" living has long been a source of criticism, and it is to be abolished on the 21st of this month. Licensed prostitutes will then be free to leave the restricted districts whenever they wish without permission from the police if only the brothel host consents. There is, of course, some apprehension concerning their immoral practice outside their quarters, with some fear of difficulty in preventing venereal disease. While this "uncaging" may tend to encourage an increase in the number of prostitutes, from the point of view of recognizing individual liberty it has received the approval of the public. The Christian Women Purification Crusade is reported to have renewed its plans to abolish the brothels in order to release about 22,000 prostitutes from slavery, asserting that there will be no increase in venereal disease.

The International Red Cross Conference

It has been decided to hold the International Red Cross Conference in October, 1934, in Tokyo. It is reported that sixty-four countries and fifty-eight Red Cross societies will send delegates.

Increase in Dentists Attached to Public Schools

The school dental law was promulgated in 1931, and the school dental service regulations were announced by the education office in 1932. Complete control all over the country in this line of hygiene has been made. In spite of the business depression, the employment of school dentists has rapidly increased. According to an investigation in April, 3,619 primary schools had employed 2,788 dentists. In the middle grade schools, 719 schools had employed 690 dentists. Last year 126,699 yen was spent in the primary schools and 14,965 yen in the middle grade schools for this purpose.

Health Insurance

Along with government health insurance there have been formed two private health insurance schemes, one between a city medical association and some large factories, the other between a prefectural medical association and some factories in one of the chief manufacturing centers, for the first time. According to the agreement, all members of the associations are to be panel doctors, and all the operatives in factories and their families have free choice of physicians. The fee will be paid by the factory proprietors in advance for the patients, who are required to return the sum needed for the treatment out of

their wages little by little. The spreading tendency of sick benefit associations shows the change in medical practice in this country. But in these two cases, medical treatment is neither to be limited treatment nor treatment at cost but is to be treatment as is usual with ordinary patients.

Another sick benefit association, or health insurance, which claims a low fee and treatment at cost, has appeared in not a few towns and farming villages and is supported by the industrial guild. This guild is a powerful and widespread industrial organization with its own hospitals and clinics.

A Hereditary Eye Disease

At the meeting of the Japan Ophthalmologic Society recently in Tokyo, Prof. Dr. B. Hata, of the Okayama Medical University reported that since 1928 he had examined about 25,300 cases of eye disease, among which he found 311 cases of malignant pigment degeneration of the retina, a kind of cataract that begins at adolescence with night blindness, and ends in blindness in a score or so of years. Among the 311 there were 161 blind. Going back to their ancestors, he investigated the relation of this disease to marriage and heredity. Fifty-four cases were found to have occurred among consanguineous marriages. Of these fifty-four patients, forty-four had parents who were related by blood; 167 had ancestors who had suffered from the same disease. No such transmission was found in forty-four cases. He concluded from this research that the disease was transmitted by intermarriage or was hereditary.

Increase in Crime and Suicides

A sharp increase in the number of crimes committed in this country is indicated by official figures obtained from the bureau of police. In all, 1,181,705 cases of violation of law were recorded by the police in 1931, with an annual increase of about 120,000 cases during the preceding years. There were 769 cases of manslaughter in 1930 and 952 in 1932. Of offenses in 1931 the most conspicuous increases were in cases of theft and false pretense. In 1929, 2,412 robberies in which either threats or weapons played a part were committed, and in 1930 a total of 2,282. In the following year, however, a slight decrease was noted, the figure dropping to 2,198. The number of minor thefts committed in 1930 totaled 540,310, and in the following year increased to 584,542. Illegal acts committed by sexual perverts in 1930 numbered 3,039; in 1931 this figure increased to 3,409. Violation of the laws on gambling in 1931 totaled 26,964, with an increase of approximately 3,000 cases compared with 1930. Figures pertaining to suicides and attempted suicides in the Tokyo metropolitan police area during 1932 were 2,357, which shows an increase of 507 compared with the previous year. In 1932, 1,401 men and 965 women committed or attempted suicide; in 1931, 1,160 men and 690 women. In 1932, poison was used by 516 men and 476 women; drowning, by 231 men and 98 women; hanging, by 271 men and 94 women; jumping before trains, by 226 men and 50 women.

The Society for the Encouragement of Science

A society for encouraging the promotion of all branches of science was formally organized this spring. The last session of the diet approved the government's annual subsidy of 750,000 yen. Besides, the emperor's subsidy was 1,500,000 yen. The total sum to be spent annually to encourage scientific research will amount to 5,000,000 yen. The honorary president of the society is Prince Chichibu, the younger brother of the emperor; the president is Viscount Admiral Saito, the prime minister, and the chief director is Dr. Joji Sakurai, D.Sc., president of the Imperial Academy. From medical circles, six councilors were appointed, including Dr. T. Kitajima, head of the Japan Medical Association. The society will begin work this autumn; its selection is said to be the result of careful deliberation by 110 councilors.

Marriages

JOSEPH GARBER COCKE, Birmingham, Ala., to Miss Violet D. Hoile at Columbus, Ga., June 5.

ERNEST HENRY WARNOCK to Miss Mary Frances Ogle, both of Indianapolis, May 20.

WILLIAM RIVES WILSON to Miss Elleda Bristol, both of Ansonia, Conn., May 20.

HERMAN B. KAUFMAN to Miss Ida Snewind, both of Youngstown, Ohio, June 11.

CLIFFORD L. CARTER to Miss Astrid Nygren, both of Chicago, June 7.

Deaths

George Eli Armstrong, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1877; emeritus professor of surgery at his alma mater; member and past president of the American Surgical Association; fellow and past president of the American College of Surgeons; past president of the Canadian Medical Association; served during the World War; aged 78; consulting surgeon to the Verdun Protestant Hospital, Montreal General Hospital and the Royal Victoria Hospital, where he died, May 25.

George Francis Suker @ Chicago; University of Michigan Medical School, Ann Arbor, 1892; Chairman of the Section on Ophthalmology, American Medical Association, 1930-1931; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; on the staffs of the Post-Graduate Hospital, Cook County Hospital, Grant Hospital and the Edward Hines, Jr., Hospital, Hines, Ill.; aged 63; died, July 2, of coronary sclerosis.

Gordon Moore Gibson @ Brooklyn; McGill University Faculty of Medicine, Montreal, Que., Canada, 1904; associate professor of obstetrics and gynecology, Long Island College Hospital; fellow of the American College of Surgeons; on the staffs of St. Peter's Hospital and the Huntington (N. Y.) Hospital; aged 51; died suddenly, June 17, of coronary thrombosis and arteriosclerosis.

Leo Brooks Rosenthal @ New York; Columbia University College of Physicians and Surgeons, New York, 1909; adjunct professor of internal medicine, New York Polyclinic Medical School and Hospital; aged 48; on the staffs of the People's Hospital and the Sydenham Hospital, where he died, June 18, of injuries received when he was struck by an automobile.

Faxton Eugene Gardner @ Fairlawn, N. J.; Université de Paris Faculté de médecine, 1904; clinical professor of dermatology and syphilology, New York Polyclinic Medical School and Hospital; member of the Medical Society of the State of New York; served during the World War; aged 55; died, June 21, in the Peekskill (N. Y.) Hospital.

Ernest Hamilton White, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1901; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; professor of otolaryngology at his alma mater; on the staff of the Royal Victoria Hospital; aged 55; died, June 15.

Archibald Clair Adams, Lima, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1900; member of the Ohio State Medical Association; formerly county coroner; on the staffs of St. Rita's Hospital and the City Hospital; aged 58; died, June 15, of heart disease.

James Harry Ullrich @ Baltimore; Baltimore Medical College, 1897; associate professor of gastro-enterology, University of Maryland School of Medicine and College of Physicians and Surgeons; served during the World War; aged 58; died, June 27, in the University Hospital, of suppurative pancreatitis.

Clement Biddle @ Medical Inspector, Commander, U. S. Navy, retired, Philadelphia; Jefferson Medical College of Philadelphia, 1878; entered the Navy in 1878 and retired in 1908 on application after thirty years' service; served during the Spanish-American War; aged 78; died, June 5.

Ernest Sanford Jack, Melrose, Mass.; Harvard University Medical School, Boston, 1886; member of the Massachusetts Medical Society; on the staff of the Melrose Hospital; aged 72; died, May 17, of chronic nephritis, hypertension and cerebral hemorrhage.

George William Roberts, Spokane, Wash.; Medical College of Ohio, Cincinnati, 1884; member of the Washington State Medical Association; veteran of the Spanish-American War; aged 63; died, May 11, of bronchopneumonia and metastatic carcinoma.

William Cantine Gilley, New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1885; member of the Medical Society of the State of New York; aged 82; died, June 21, in St. Luke's Hospital, of heart disease.

Charles Huber, New York; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of the State of New York; on the staff of the Lenox Hill Hospital; aged 60; died, June 4, of cerebral hemorrhage.

Edward H. Whitcomb, St. Paul; Columbus (Ohio) Medical College, 1884; an affiliate Fellow of the American Medical Association; formerly county coroner; aged 71; on the staff of St. Joseph's Hospital, where he died, June 8, of cerebral glioma.

Raymond Coleman Hill, Rochester, N. Y.; Syracuse University College of Medicine, 1905; member of the Medical Society of the State of New York; on the staff of the Rochester State Hospital; aged 53; died, June 5, of heart disease.

Fred W. Vance, Mannington, W. Va.; Eclectic Medical Institute, Cincinnati, 1905; member of the West Virginia State Medical Association; formerly mayor of Mannington and member of the board of education; aged 59; died, May 20.

Frederick Lamont Gates, Cambridge, Mass.; Johns Hopkins University School of Medicine, Baltimore, 1913; lecturer on general physiology, Harvard University; aged 46; died, June 18, of a skull fracture, received in an accident.

Benjamin Emmett Graham, Gurley, Ala.; University of the South Medical Department, Sewanee, Tenn., 1894; past president of the Madison County Medical Society; aged 59; died, June 22, as the result of an automobile accident.

Robert Ira Busard Ⓢ Muskegon, Mich.; Northwestern University Medical School, Chicago, 1910; fellow of the American College of Surgeons; on the staff of the Hackley Hospital; aged 46; was killed, June 21, in an airplane accident.

Isaac Ward Sampsell, New York; Northwestern University Medical School, Chicago, 1900; member of the American Psychiatric Association and the Medical Society of the State of New York; aged 60; hanged himself, June 27.

Herbert William Newhall Ⓢ Lynn, Mass.; Harvard University Medical School, Boston, 1884; for eight years member of the school committee; aged 75; died, June 18, of coronary thrombosis, myocarditis and arteriosclerosis.

Clarence Erroll Wilson, Boise City, Okla.; State University of Iowa College of Medicine, Iowa City, 1910; member of the Oklahoma State Medical Association; aged 46; died, June 22, of a self-inflicted bullet wound.

James Flandreau Van Fleet Ⓢ New York; Fordham University School of Medicine, New York, 1918; on the staffs of the Nyack (N. Y.) Hospital and the Manhattan Eye, Ear and Throat Hospital; aged 42; died, June 5.

Robert Harold Coker, Tallahassee, Ala.; University of Alabama School of Medicine, 1915; member of the Medical Association of the State of Alabama; aged 40; died, June 17, in St. Margaret's Hospital, Montgomery.

Justin Thomas Smallwood, Worthington, Minn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1908; member of the Minnesota State Medical Association; aged 50; died, May 24.

William Van Werden, Los Angeles; Rush Medical College, Chicago, 1885; member of the Iowa State Medical Society; aged 70; died, April 18, at the Iowa Methodist Hospital, Des Moines, of carcinoma of the liver.

Charles Edward Adams, Gastonia, N. C.; University of Maryland School of Medicine, Baltimore, 1878; member of the Medical Society of the State of North Carolina; aged 78; died, June 9, of angina pectoris.

Edward George Hayer Ⓢ Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1910; for many years on the staff of the Nanticoke Hospital; aged 50; died, June 20, in Belmar, N. J., of endocarditis.

Charles Bryant Clark, Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1893; member of the Iowa State Medical Society; aged 61; died, June 24, of subarachnoid hemorrhage.

John Williams Brown Ⓢ University of Virginia Department of Medicine, 1899; served during the World War, 1917-18; died, June 1, of poisoning, self administered.

Sydney Sumner De Beck, Franklin, Maine; University of Vermont College of Medicine, Burlington, 1887; member of the Maine Medical Association; aged 69; died, March 20, of heart disease.

Charles Edmund Carr, New York; Columbia University College of Physicians and Surgeons, New York, 1913; aged 50; died, May 17, in the Presbyterian Hospital, of pulmonary embolism.

William T. Mefford Ⓢ Riverside, Ill.; Cincinnati College of Medicine and Surgery, 1874; Medical College of Ohio, Cincinnati, 1880; aged 80; died, May 17, of uremia and chronic nephritis.

George Wesley Hinkle, Harvard, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1875; member of the Iowa State Medical Society; Civil War veteran; aged 83; died, May 13.

Lewis Fish, Fitchburg, Mass.; Baltimore Medical College, 1898; member of the Massachusetts Medical Society; on the staff of the Burbank Hospital; aged 62; died, June 3, of angina pectoris.

Guy Roland Anderson Ⓢ Barnesboro, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1899; formerly member and president of the school board; aged 59; died, June 17.

Luther Edgar Moore, Searcy, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1885; member of the Arkansas Medical Society; aged 72; died, June 4, of senility.

Albert S. Applewhite, Jackson, Miss.; Atlanta (Ga.) School of Medicine, 1908; member of the Mississippi State Medical Association; aged 63; died, June 6, of heart disease.

Silas Simeon Brown, Pittsburgh; Baltimore Medical College, 1893; aged 70; died suddenly, May 31, in a railway station at Little Falls, Minn., of cerebral hemorrhage.

Jacob S. Shoemaker Ⓢ New Lothrop, Mich.; University of Michigan Medical School, Ann Arbor, 1883; aged 78; died suddenly, June 20, of heart disease, at Cynthiana, Ky.

Joseph Octave Reaume, Windsor, Ont., Canada; Michigan College of Medicine, Detroit, 1885; Faculty of Medicine of Trinity College, Toronto, 1886; aged 77; died, June 13.

James Hughes Neff, Sullivan, Ind.; Kentucky School of Medicine, Louisville, 1890; member of the Indiana State Medical Association; aged 72; died, June 22, of nephritis.

John Hamilton Charters, Detroit; Saginaw (Mich.) Valley College, 1903; member of the Michigan State Medical Society; aged 54; died suddenly, June 22, of heart disease.

John Henry Linder, Socorro, N. M.; University of Louisville (Ky.) School of Medicine, 1909; aged 48; died, June 8, of a self-inflicted bullet wound in the head.

Amos Avery, Portland, Ore.; Long Island College Hospital, Brooklyn, 1899; aged 65; died, May 29, in the Portland Sanitarium, of cerebral hemorrhage.

Harry Melick Keller Ⓢ Hazleton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1888; aged 66; died, May 27, of heart disease.

Magnus F. Stewart, Loveland, Colo.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; aged 62; died, April 30, of cerebral embolism.

Amelia Augenia Dranga Ⓢ Pittsburgh; Woman's Medical College of Pennsylvania, Philadelphia, 1897; aged 66; died, May 27, of heart disease.

Josiah Evans Cowles, Los Angeles; University of Maryland School of Medicine, Baltimore, 1880; aged 78; died, June 14, of heart disease.

James C. Littleton, Baltimore; University of Maryland School of Medicine, Baltimore, 1883; aged 85; died, June 9, of bronchopneumonia.

Jacob E. Nyquist, Duluth, Minn.; University of Minnesota Medical School, Minneapolis, 1905; aged 59; died, May 24, of gastric carcinoma.

William Daniel Cox, Strawberry Plains, Tenn.; Tennessee Medical College, Knoxville, 1900; aged 72; died, June 21, of angina pectoris.

Howard Girard Barton, Adelphi, Ohio; Ohio Medical University, Columbus, 1893; aged 69; died, June 8, of organic heart disease.

John Robert Durrett, Nelson, Mo.; Missouri Medical College, St. Louis, 1899; aged 59; died, May 27, of cerebral hemorrhage.

Byron Stillman Cranston, New London, Ohio; Baltimore Medical College, 1893; aged 64; died, June 13, of nephritis.

George L. Cornell, Rudyard, Mich.; Detroit College of Medicine, 1890; aged 68; died, June 6, of heart disease.

Bureau of Investigation

CURRIER'S TABLETS

Another "Patent Medicine" for Stomach Ulcers

During the past three or four years the country has been flooded with "patent medicines" sold for the alleged cure of stomach ulcers, hyperacidity and general gastric distress. Possibly the economic stress through which the country has been passing, with the resultant worry and mental depression has brought about an increased incidence of so-called gastric neuroses. There seems little doubt that gastric distress is widely prevalent. Persons thus afflicted have their condition still further aggravated by the "patent medicine" advertisements, either in newspapers or over the radio, that, like all "patent medicine" advertising, attempt to develop the fear complex—to make well people think they are sick and sick people think they are dangerously sick. The belief is implanted in the minds of the sufferers that they have peptic or duodenal ulcer, and they are led to believe that the only hope of escaping the operating table is to buy the particular "patent medicine" whose advertisements they happen to read or hear.

There are numerous preparations of the stomach-ulcer-cure type on the market. One of the first to be puffed was "Pfunder's Stomach Tablets," which came from Minneapolis. It was dealt with in an article in this department of *THE JOURNAL*, Dec. 1, 1928, and it was there shown that the tablets were essentially a mixture of bismuth subnitrate, magnesium oxide and baking soda. Then there was "Udga," which came from the same part of the country as Pfunder's and apparently had much the same composition. This was the subject of a brief item in the "Queries and Minor Notes" Department of *THE JOURNAL*, Feb. 15, 1930. A "patent medicine" advertised extensively for "heartburn, acid indigestion, sour stomach and gas" and rejoicing in the descriptive name "Tums for the Tummy," was found to be a mixture of chalk and sugar flavored with peppermint. It was the subject of a short article in this department of *THE JOURNAL*, May 23, 1931.

Judging from the number of inquiries received by the Bureau of Investigation, it would seem that one of the most widely exploited nostrums in the stomach-ulcer class at the present time is "Currier's Tablets," put out from Los Angeles. Currier's Tablets are advertised by that new boon to the nostrum exploiter, the radio, although some newspaper space has also been used. Those who write to Currier's Tablets, Inc., Los Angeles, to ask for further information regarding the product are sent a letter printed in imitation typewriting, stating that the tablets "are not merely a temporary relief, but are intended to stimulate the stomach to normal and overcome the cause." The recipient of the advertising is also told that the tablets sell for \$5 a bottle and that if at the end of fifteen days' use the patient is not satisfied that he is being benefited, he may return the balance of the tablets and the \$5 will be refunded. With the letter there comes an advertising sheet, one-half of which is devoted to the story of how Currier's Tablets were discovered; the other half is devoted mainly to testimonials. The story of the discovery is rather typical of "patent medicine" exploitation. It is to the effect that Roy G. Currier was a "tall, dejected, depressed, unhappy" man in 1911 who weighed "a mere 137 pounds" and was suffering from an "enlarged liver." Four years' "consistent treatments succeeded in reducing the liver to a normal size." But alas! "The shell of a man remains the same." His case was then diagnosed as duodenal ulcer. He took "Pounds and pounds of Baking Soda . . . Tons of Bismuth of Megnesia [sic!] . . . Gallons of Peppermint." Later Roy G. Currier decided to take upon himself "the responsibility of experimenting with HIS OWN life . . . HIS OWN health . . . HIS OWN STOMACH." With the aid of a "chemist friend" and "months of laboratory work," they developed the "secret compound"—Currier's Tablets. "The climax had been reached. Roy G. Currier was relieved of DUODENAL ULCERS . . . BY HIS OWN COMPOUND!!!" Thus was Currier's Tablets, Inc., formed, and the public is told that "under the protection of copyrights and patents Currier's Tablets became a byword . . . a boon

. . . a human necessity in the treatment of Hyperacidity, acidosis, gastritis, indigestion and Stomach Ulcers." It was, in short, a "marvelous remedy" that has "startled the medical world."

Another piece of advertising sent out by Currier's Tablets, Inc., is a sixteen-page pamphlet entitled "Facts." Two pages are devoted to giving the public some interesting misinformation regarding the human stomach. A picture is given of what is described as the "normal empty stomach" and shows it as an open bag! Mr. Currier's advertising men should look up their high-school physiology textbooks, even if they don't do further research. Two more pages of the pamphlet are devoted to proving that Currier's Tablets will cure stomach ulcers. Two X-ray pictures are reproduced showing a stomach ulcer before Currier's Tablets were taken and the same spot after they were taken. Then follow some pages of testimonials which are signed only with initials. One testimonial from a woman in Houston, Texas, stated that Currier's Tablets had helped her husband wonderfully, that an X-ray had shown a bad obstruction "which some said was cancer." The pernicious implications that are carried by advertising of this kind are obvious. Other testimonials describe how ulcers had been cured, how stomach troubles of thirty-five years ended, how gastritis was ended, etc.

Because of the number of inquiries received regarding Currier's Tablets, the A. M. A. Chemical Laboratory was asked to analyze the product. The chemists' report follows:

LABORATORY REPORT

"An original specimen of Currier's Tablets (Currier's Tablets, Inc., 1460 North Vine Street, Los Angeles, Calif.), Price \$5.00, was submitted to the A. M. A. Chemical Laboratory for examination. The label on the bottle bore the following statement:

"Currier's Tablets—Currier's Tablets can be obtained from Currier's Tablets, Incorporated, 1460-1462 N. Vine St., Los Angeles, Calif. Price, \$5.00. Contents 100 Tablets.

"Neutralizes gastric hyperacidity. In all cases where indicated these tablets have proven highly efficient."

"The jar contained 100 large cream-colored tablets possessing an aromatic odor resembling that of menthol. The average weight of each of 10 tablets, weighed individually, was 2.57 Gm. (approximately 40 grains) with a variation of 2.1 per cent above to 1.4 per cent below.

"Qualitative tests indicated the presence of starch, carbonates, nitrates, bismuth, magnesium, sodium, a substance resembling menthol, and acid insoluble material (talc). Calcium, mercury, antimony, potassium, chlorides, sulphates, phosphates, phenolphthalein, emodin-bearing drugs and alkaloids were not found.

"Quantitative determination yielded the following:

| | |
|---|---------------|
| "Loss on drying (100° C.)..... | 7.2 per cent |
| Loss over sulphuric acid..... | 2.7 per cent |
| Ash | 62.9 per cent |
| Acid insoluble material (talc)..... | 2.0 per cent |
| Bismuth (Bi+++) | 23.7 per cent |
| Magnesium (Mg++) | 16.3 per cent |
| Sodium (Na+) | 6.5 per cent |
| Carbon dioxide (CO ₂) | 11.8 per cent |
| Starch | 4.9 per cent |

"Based on the foregoing, it may be calculated that Currier's Tablets contain as essential ingredients:

| | |
|-----------------------------------|----------------|
| "Bismuth Subnitrate, U. S. P..... | 33.4 per cent |
| Magnesium Oxide, U. S. P..... | 31.1 per cent |
| Sodium Bicarbonate, U. S. P..... | 22.7 per cent" |

From the chemists' analysis, it appears that Currier's Tablets, the "secret compound" that was developed after "months of laboratory work" by Mr. Currier and his chemist friend, is essentially identical with the stock bismuth compound tablet that most of the large pharmaceutical houses sell. On the basis of the chemists' analysis, Currier's Tablets are approximately equivalent to a tablet having the following composition:

| | |
|--------------------------|-----------|
| Bismuth subnitrate | 13 grains |
| Magnesium oxide | 12 grains |
| Sodium bicarbonate | 9 grains |

Nearly all large pharmaceutical houses stock a tablet composed of bismuth subnitrate 10 grains, magnesium oxide 10 grains, and sodium bicarbonate 10 grains. These sell at \$1.85 a hundred. Currier's Tablets, Inc., sell for \$5 a hundred.

That Currier's Tablets will give temporary relief in cases of hyperacidity is, of course, obvious—but so will a little baking soda. It is equally true that the person with a gastritis, a peptic or a duodenal ulcer, or a beginning malignancy who attempts to treat himself with Currier's Tablets or any other "patent medicine" is running serious risks—how serious every physician realizes.

WILLARD'S TABLETS

Still Another Nostrum for Stomach Ulcer

"Willard's Tablets" are sold on the mail-order plan and marketed by the Willard Tablet Company of 215 West Randolph Street, Chicago. The Willard Tablet Company seems to be a trade name used by one Oscar E. Frieder. The company was incorporated in Delaware in May, 1932, and holds a license to operate in Illinois. The Willard Tablet Company shares its quarters with several other companies in which Oscar E. Frieder or other individuals by the name of Frieder are interested. According to the Willard Tablet Company's stationery, its telephone number is Franklin 1966. At the same address and using the same telephone number are the following concerns:

First United Finance Corporation
D. & M. Finance Company
Frieder Finance Association
Silver Mirror Company
Satis-Factory Shoe Company

At this point it is worth calling attention to the fact that part of the advertising follow-up material sent out by the Willard Tablet Company is a saffron-colored sheet entitled "Certificate of Deposit". This certifies that the Willard Tablet Company has placed on deposit with the First United Finance Corporation of Chicago "a sufficient sum of money to insure the prompt full cash refund" of all requests made by persons who state that after taking the Willard Tablets for fifteen days, they are not convinced that they have received any benefit. The same certificate also states that the First United Finance Corporation has examined all the letters that are used in testimonials in the Willard Tablets advertising. The president of the First United Finance Corporation is one Edward Frieder, while Oscar E. Frieder, president of the Willard Tablet Company, operating from the same address and using the same telephone number, is also said to be interested in the First United Finance Corporation.

The Willard Tablet Company has advertised somewhat extensively over that boon to the nostrum exploiter, the radio—for it is notorious that certain radio stations will accept "patent medicine" advertising that all but the lowest grade of newspapers and magazines will reject. Those who write in to the Willard concern receive a form letter in imitation typewriting, together with the usual number of testimonials, an order blank, the so-called Certificate of Deposit, and a twelve-page leaflet entitled "Willard's Message to Stomach Sufferers." According to the "Message" Willard's Tablets are a "quick, positive relief" for the following conditions:

| | |
|-----------------------------|--|
| Stomach and duodenal ulcers | Sour stomach |
| Gas pains | Hyperacidity |
| Indigestion | Belching |
| Constipation | Bloating |
| Acid dyspepsia | Loss of appetite |
| Heartburn | Upset stomach from alcoholic beverages |
| Bad breath | |

The correspondent is told in the form letter that:

"Willard's Tablets are a most wonderful preparation for the treatment of stomach ulcers and other disorders of the stomach due to or accompanied by acidity or food fermentation."

"Willard's Tablets afford the most reliable and dependable treatment for relief from stomach and duodenal ulcers, gas pains, indigestion, constipation, acid dyspepsia . . ." etc., etc.

One would get the impression from reading the Willard Tablets advertising that the tablets themselves were some remarkable formula unique in the history of therapeutics. The facts are Willard's Tablets are just another one of the antacid preparations containing, essentially, baking soda, bismuth subnitrate and magnesium oxide, a well-known combination that can be purchased in any drug store at a fraction of the price charged for the Willard nostrum.

Correspondence

'CONTINUED USE OF DIGITALIS IN PATIENTS WITH REGULAR RHYTHM'

To the Editor:—Any one who has interested himself in tracing back to original sources statements subsequently attributed to an author is struck by the frequency with which ideas are attributed to authors which are quite remote from the meaning of the statement originally made by this same author. Something of this sort will be found in the editorial in THE JOURNAL, June 3, entitled the "Continued Use of Digitalis in Patients with Regular Rhythm," in which the idea is attributed to me of having suggested that digitalis was a specific like thyroid in myxedema and liver in pernicious anemia. What I actually said was that, like these two forms of therapy, digitalis therapy, if started as suggested in my paper in THE JOURNAL, March 18, should be continued throughout life, which is entirely a different proposal from that attributed to me in the editorial referred to.

HENRY A. CHRISTIAN, M.D.,
Peter Bent Brigham Hospital,
Boston.

MORE ABOUT THE EFFECTS OF URETHRAL MEDICATION

To the Editor:—Concerning my answer to the California physician's query (THE JOURNAL, March 11, p. 766) against which Dr. Wolbarst voices a dissenting opinion (THE JOURNAL, May 13, p. 1558) I feel that his criticism deserves an answer. On the true facts rests the entire question of the prevention of posterior urethral infection. At the same time I admire Dr. Wolbarst and his work so greatly that I am loath to enter a discussion against his opinion.

His dissenting opinion is raised against my statement that, "if the anterior urethra is only partially filled with injected fluid, the tonic contraction of the cut-off muscle will prevent any of it passing into the posterior urethra, no matter how long it is retained." Against the truth of this statement he opposes an experience of over thirty years in urology. However, he has not raised a question that cannot be settled easily by any one who owns an anterior urethra, though he has placed(?) on his side "the experience of every urologist." That means that a lot of people who disagree with him probably are not urologists. Some thought they were.

Let us examine his "evidence." He says that when 2 or 3 drachms of fluid is injected into the urethra and held for some time only about 50 per cent of it is recovered, which "proves" that the rest seeped back through the cut-off muscle. Is this proof?

In his book he states that the anterior urethra is from 5½ to 6 inches long and will take a sound from 27 to 30 F. One is safer to take 27 F. as his figure for the estimation of capacity. It is interesting to note that it requires a 27 F. urethra of a length of approximately 8¼ inches to hold 3 drachms of fluid. Why attribute to seepage past a sphincter fluids that by the nature of things must be forced into the posterior urethra? One would like to say that the urethras were longer in New York than in the City of Brotherly Love, but he voids such a view by admitting that they just turn out standard sizes like the rest of our cities.

Obviously Dr. Wolbarst and my reply are not talking of the same thing. The reply spoke of a *partially* filled urethra. Any one who will make the following test will agree with its contention: Inject 5 or 6 cc. of a colored solution into the anterior urethra, have it retained for five minutes or even an hour, gently irrigate the anterior urethra to remove any of

the color, and then have the patient pass some urine in a glass. If the solution has "seeped" into the posterior urethra it will be in the first urine voided after such a test.

In some experimental work on the hydrogen ion concentration of the urethral secretion (Pelouze and Gonzales: *J. Urol.* 22:407 [Oct.] 1929) we on far more than 100 occasions injected 5 cc. of a 5 per cent sodium chloride solution into the anterior urethra, had it retained for five minutes, and carefully measured the expelled fluid. On not a single occasion was less than 5 cc. of fluid obtained.

Regarding Dr. Wolbarst's contention that the passage of fluids from a gonorrheal anterior urethra into a noninfected posterior urethra is a salutary thing, I can only say that in Philadelphia it usually precipitates posterior infection. I have seen enough cases from New York to know that this is not peculiar to my own city or practice.

P. S. PELOUZE, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BLEEDING TIME AND COAGULATION TIME

To the Editor:—Will you kindly tell me the essential difference between the "bleeding time" and the "coagulation time," and the standard tests for each. Most textbooks are not clear on the subject.

H. E. FRUIT, M.D., Fostoria, Ohio.

ANSWER.—The essential difference between the bleeding time and the coagulation time is that in the former test the factors of cephalin of the tissue juice, mechanical action of the blood platelets, and vessel permeability play a part. Bleeding time is the time required for a small cut to stop bleeding, while coagulation time is time between the withdrawal of blood from a vessel and its formation into a clot in vitro. The standard test for the bleeding time is the method of Duke. A small cut is made in the lobe of the ear with a cataract knife or sharp scalpel. The incision should be of such size that the drop of blood when taken up on filter paper will have the diameter of from 1 to 2 cm. Successive drops are blotted up every half minute until bleeding stops. The tissue must not be traumatized during the procedure. The normal time for this method is three minutes or less, or from two to six blots. In speaking of a standard test for the coagulation time, one must bear in mind that the time varies with the method employed. In all methods using blood from a skin cut, the admixture of tissue juice is a variable factor. Such tests are more apt to be unreliable than tests in which blood is drawn from a vein. There are, however, circumstances in which venipuncture is not possible. Under these circumstances, one of the methods employing capillary blood may be used; but the variable factors must be appreciated. The most simple of this group of tests is the glass slide method. The skin is punctured with a sharp instrument so that a free flow of blood is obtained. Several drops of blood are received on a carefully cleaned slide. A needle or pin is drawn through the drop at intervals of one minute. When shreds of fibrin cling to the needle or pin and are dragged along by it, coagulation has taken place. The normal time is seven minutes or less. Evaporation must be prevented by suspending the slide on glass rods above filter paper moistened with warm water in a petri dish.

The standard test for coagulation time is the method employing venous blood. Blood is removed from a vein and delivered in a test tube. Coagulation has taken place when the tube can be inverted without displacing the clot. The time will vary with the diameter of the tube. The smaller the diameter of the tube, the more rapid is the clotting time. Either the method of Lee and White or the method of Howell is standard. In the former method, 1 cc. of venous blood is delivered into an 8 mm. diameter test tube previously rinsed with physiologic solution of sodium chloride. The normal coagulation time by this method is eight minutes or less. In the Howell method the syringe is prepared by filling it with a mixture of ether and liquid petrolatum. The mixture is forced out and air is drawn up several times, so that the ether evaporates and leaves a thin coating of oil. From 2 to 4 cc. of venous blood is delivered into a test tube with a 21 mm. bore. Normal by this method is from

ten to twenty minutes. If room temperature is not between 65 to 80 F., the tube should be immersed in water with a constant temperature of 75 F.

BLOOD CULTURE OF STAPHYLOCOCCUS ALBUS

To the Editor:—What line of treatment would you suggest for a patient whose blood culture shows *Staphylococcus albus*? This condition has come on following a mild attack of influenza. Please omit name.

M.D., South Dakota.

ANSWER.—The severity of the infection really determines the treatment. The presence of *Staphylococcus albus* in a blood culture is generally considered a contamination, since *Staphylococcus albus* septicemia, is rather uncommon. When it does occur, it may appear in one of three forms:

1. The mild or transient type, in which few organisms reach the circulation and localize at some point of lowered resistance. A characteristic example of this type is the so-called primary acute osteomyelitis.

2. The severe or pyemic type, associated with symptoms of marked prostration and the development of multiple abscesses.
3. The terminal or fulminating type.

The treatment naturally varies with the severity of the infection. On the whole, it may be divided into systemic or supportive, surgical, and chemical treatment of the blood stream.

Systemic treatment includes such general supportive measures as absolute rest, fresh air, adequate nutrition, forced fluids and careful nursing.

Surgical treatment is frequently necessary, since the disease is one in which the primary focus or the complications consist of inflammatory or suppurative processes. It is essential that the primary focus, if evident, be removed or adequately drained whether it is a boil, a carbuncle or osteomyelitis. The development of secondary or metastatic abscesses must be watched for and these, wherever they occur, should likewise be treated surgically.

The chemical treatment of the blood stream, or what is considered the specific treatment, varies widely, since there actually is no specific treatment.

Excellent results have been obtained following repeated small blood transfusions. Whole blood in amounts of from 150 to 300 cc. is given every other or every third day, a new donor being preferably used each time. Immunized donors have been used with no special influence on the results. Brilliant results also have been reported following the use of vaccine. Mixed vaccines have been used, but autogenous vaccine is preferred. The first dose is 100 million killed organisms given subcutaneously. Injections are repeated at intervals of from three to five days, the dose being increased each time until 1,000 million organisms are given at each injection. Treatment is continued until all evidence of the disease disappears.

In addition, the use of bacteriophage, metaphen, mercurochrome, gentian violet and nuclear extract has been recommended.

DEATH FOLLOWING ANTITYPHOID VACCINATION

To the Editor:—A physician, aged 44, in apparently good health, died about six hours after taking his third prophylactic injection of typhoid vaccine. Shortly after the injection he developed a severe chill and complained of generalized aching, especially in the back. Circumstances seem to indicate a cardiac death. About three or four years previously he refused to take his third typhoid vaccine because of the reaction from the first two. Are there any cases reported of deaths due to typhoid vaccine and, if so, what is the mechanism involved?

JOHN B. BENNETT, M.D., Falfurrias, Texas.

ANSWER.—Death following typhoid vaccination has been recorded in a few instances. Oberndorfer reported a case (Plötzlicher Tod nach Typhusschutzimpfung, *Militärärztl. Ztschr.* 47:286, 1918) in which a man, aged 41, suffering from "nervous sleeplessness," received 0.5 cc. of typhoid vaccine at 2 o'clock in the afternoon and died after eight hours. The symptoms preceding death are not described in detail. The postmortem examination revealed an extensive syphilitic aortitis with narrowing of the coronary openings and involvement of the aortic valves; the heart muscle had small white scars and also fresh hemorrhagic infarcts. The heart was dilated and the lungs, liver and other organs passively congested. According to Oberndorfer, G. B. Gruber has reported that, in a corpulent soldier who died from eight to ten hours after typhoid vaccination, the postmortem examination showed marked hypertrophy and dilatation of the heart, with passive congestion of the organs. Oberndorfer also refers to a case described by Askanazy in a man, aged 22, who died on the fourth day after vaccination; the necropsy showed a severe interstitial myocarditis and radiating scars in the pharynx and the liver. These cases illustrate that in persons with serious heart disease typhoid vaccination, apparently at least, may hasten death.

Russell (Report of Two Deaths from Third Inoculation with Typhoid-Paratyphoid Vaccine, *Kentucky M. J.* 22:378 [Oct.] 1924) has reported two deaths soon after the third injection of typhoid-paratyphoid vaccine. A man, aged 53, apparently in good health, received his third inoculation about 4 o'clock in the afternoon; the patient went home, feeling stiff, achy and cold; he grew worse, became cyanotic, had a chill, and died suddenly. In this case severe reactions, which are not described, followed the first as well as the second inoculation. No cause for death was found on postmortem examination and microscopic examination of the heart muscle and the kidneys. Was this case an example of fatal anaphylactic reaction? The second case is described by Dr. J. M. Shipp in a letter which Russell quotes: "Your case was exactly like mine. My patient was in good health until I gave the third injection. He had no trouble from the first and second doses. Age 19; health good, heart sound: No previous injection of vaccine or serum before the typhoid vaccine. Third injection given at 5 p. m. At 8 p. m. I was called and found him with a temperature of 106, very rapid and bad pulse, looked as though he would die, but about 1 a. m., his temperature went down to 102. He seemed to be better until about 10 a. m., when his fever rose and he died at 1 p. m. He looked like a man that had typhoid fever three or four weeks." Was this a case of fulminant acute infection?

No death is recorded from the typhoid vaccination of approximately 4,000,000 men mobilized in the United States during the World War (Siler, J. F., and Lambie, J. S., Jr.: *The Medical Department of the United States Army in the World War* 9:15, 1928).

SIGNIFICANCE OF CASTS IN URINE OF ECZEMA-TOUS CHILD

To the Editor:—In making a routine urinalysis on a 3½ year old boy who is apparently perfectly healthy (he has a slight eczema of the face and a chronic watery discharge from the nose), I find numerous hyaline and a few granular casts. This specimen was voided in the middle of the morning. A first morning specimen examined four days later contained hyaline casts and probably a slightly larger proportion of granular casts. No albumin was found on either examination. Other tests were normal. What is the significance of this observation? What is the prognosis? What treatment is necessary? Please omit name. M.D., Michigan.

ANSWER:—The occurrence of appreciable numbers of both hyaline and granular casts without albuminuria seems paradoxical. Assuming that there is no error of testing or interpretation, one may content oneself partially with the possibility of hyaline cast formation without nephritis. The granular casts cannot be explained on this basis. A theoretical mechanism of their formation is suggested by the allergic constitution of the child evidenced by the facial eczema and allergic rhinitis. Children with eczema are prone to exhibit urinary abnormalities. Proceeding with theory, one may conceive of the specific allergic lesion as a local renal urticaria affecting a portion of the parenchyma with sufficient disturbance of the tubules to produce casts without giving enough exudate to yield the albumin reaction.

The prognosis should be good in the absence of other changes as reported. Further study and follow up should be made concerning urinalysis, chemical changes in the blood, and blood pressure. Etiologic investigation into the only positive changes found, namely, eczema and allergic rhinitis, should be instituted and specific treatment should be directed along these lines.

PERIODICITY OF MENSTRUAL CYCLE

To the Editor:—A tertipara, aged 30, well nourished, who married at 18, had normal labors and nursed her children, had no miscarriages, and whose menstruation was of the twenty-eight day type and regular, was never sick previous to 1931, at which time she contracted scarlet fever. For the past two years she has menstruated only every three to five months, with normal flow lasting five days. Blood examination reveals 4,500,000 erythrocytes, 5,000 leukocytes and 75 per cent hemoglobin. The urine is normal. The Wassermann reaction is negative. The patient has a gonorrheal infection apparently limited to the cervix, for which she has received treatment, including the use of the electric cauterizer. Smears are now negative for gonococci but a pus discharge continues from the cervix in considerable amount. She has a medium tear of the cervix, which was cauterized. Examination of the pelvic organs reveals no tenderness. The uterus is in normal position. Abnormality of the tubes is not demonstrable. What, if any, treatment will reestablish normal menstruation? Please omit name. M.D., Montana.

ANSWER:—It is extremely difficult and in most instances impossible to change the periodicity of the menstrual cycle. The local pelvic conditions described probably have little or nothing to do with the infrequent occurrence of the uterine bleedings because the latter are controlled by the pituitary gland and the ovaries. The attack of scarlet fever may be a causative factor because the change in the menses followed it. However,

not only will the task of producing a monthly flow be difficult or impossible but there is really no good reason to attempt it. Women who menstruate only two to four times a year, such as the one mentioned, are usually in as good health as those who bleed every month, especially if the duration and amount of the flow are normal. If an attempt is to be made to reestablish a monthly cycle, at least two hormones may have to be administered, hypodermically as an experiment over a long period. For about ten to fourteen days at a time injections of estrogenic substance or theelin will have to be given, and for the next ten to fourteen days, corpus luteum extract will have to be administered. These two hormones are essential because both participate in the control of the changes that take place in the uterine endometrium during the menstrual cycle. In addition it may be necessary to give thyroid preparations by mouth, but the results with these hormones are usually not satisfactory.

ANEMIA AND THROMBOSIS

To the Editor:—I should appreciate your giving me a reference as to the possible effect of anemia on the production of an aortic thrombus. A woman, aged 47, had a hysterectomy, with hemoglobin 45 per cent. She got along well for about a week and then went into profound shock and died with multiple emboli from an aortic thrombus. The patient had been well except for excessive flowing at and between the periods. A hysterectomy was done and a pyosalpinx was removed, at which time the hemoglobin was 45 per cent. There was an uneventful course for about a week, when death followed a profound shock of about twenty-four hours' duration. At autopsy an antemortem thrombus was found to be firmly attached to the upper portion of the thoracic part of the aorta. Multiple infarcts were present in the liver, spleen and kidneys, and the left common iliac artery was plugged by a thrombus. There were no pulmonary infarcts. The lining of the aorta was smooth except for the presence of a few yellow fatty places. On section of the site of the thrombus, no change of the underlying aortic wall was made out. There was no sign of peritoneal inflammation. Please omit name. M.D., California.

ANSWER:—In a case such as described, one would naturally think of a primary thrombus originating in the veins at the site of the operation. However, unless there was a patent foramen ovale, one would expect emboli from this source to lodge in the lungs. No such observations, however, were reported in this case. Infection may be thought of as a possible or probable cause of the thrombosis. Without assuming an operative infection, there was a pyosalpinx which could easily give rise to a bacteremia. It is possible that such infection had occurred and that a thrombus formed on the wall of the aorta with superficial, slight and undiscovered anatomic evidence of its infectious origin.

There is little warrant for speaking of the direct influence of anemia in favoring thrombosis. Yet, when secondary anemia of the chlorotic type was common, thrombosis, of the veins particularly, was not especially rare. In fact, one distinction between chlorosis and pernicious anemia was, as stated in the textbooks, that thrombosis was common in chlorosis, while in pernicious anemia it was quite rare.

HEREDITY IN HARELIP AND CLEFT PALATE

To the Editor:—Oct. 26, 1930, a first child was born. The baby had a harelip and a cleft palate. The youngest brother of the father, nineteen years younger, had had a double harelip and cleft palate. Nowhere else in the family history is there any record of the deformity. Through a series of operations the child's deformity was corrected. However, the surgeon adheres to the theory that such cases are hereditary. Recently, Dr. Royal S. Copeland, in his newspaper series, announced that such troubles result from an injury to the mother when she is carrying the child. Is he correct? The mother is again pregnant. Does the second child have a good chance of escaping such a curse? Please omit name. M.D., Pennsylvania.

ANSWER:—The available statistics would suggest that there is an hereditary predisposition in something like 30 per cent of the occurring cases of congenital face clefts. From the history of many cases has arisen the impression that excessive vomiting by the mother early in pregnancy is an important feature in quite a number of them. In some others the mother has had a serious tooth complication early in pregnancy, and the impression that harelip and cleft palate occur more frequently among the poor than the well-to-do makes one feel that there might be a nutritional basis. Possibly against this it is a recorded observation that harelip and cleft palate seem to be rather common among the lion cubs born in the London zoo, but Arthur Keith has said that no prenatal handling of the mother lionesses has ever been found that seemed to influence this occurrence. According to observation, the intelligence of the average child so afflicted is equal to that of the so-called normal child; what the older observers interpreted as a basic average lower order of intelligence was a misinterpretation of faults and deficiencies dependent on lack of oppor-

tunity. For instance, unless handled properly, a child with a cleft palate is apt to be particularly deaf from the ear complications that so frequently accompany it; the resulting poor speech makes it difficult for the teacher to understand all that the child says in class, and the appearance of a poorly repaired harelip may develop a real inferiority complex. All these are things that can be taken care of, and it has been observed that the extra attention given to these children by intelligent parents and cooperative teachers often makes for finer specimens both in intelligence and in character than might have developed had they not been so afflicted. Outside of giving these children the best surgical care and special training, there is no other suggestion other than to regard it as an "act of God" which must be accepted. The occurrence of two or more children with open clefts in one family is much more rare than the single case.

DIFFERENTIAL DIAGNOSIS OF TOXIC DERMATITIS OR PSORIASIS

To the Editor:—Can urotropin (methenamine), used over a period of years, cause a skin eruption similar to psoriasis? I saw a patient today who had a nephrectomy twelve years ago for pyelonephritis. Since that time she has been taking 30 grains (2 Gm.) of urotropin daily on alternate weeks. Two months ago she developed a skin eruption, which has steadily gotten worse. This eruption is more prominent on the abdomen and the extensor surfaces of the arms and legs. The eruption starts as a small, red papule or bleb. There is intense itching and the lesions are enlarged with the scratch marks. The lesions are distinctly circumscribed, have a red base and are covered with a silver-like scale. There are no lesions on the face or nails or in the hair. Are there recorded in medical literature any cases of psoriasis-like skin lesions caused by the taking of urotropin over a period of years? Kindly omit name.

M.D., Pennsylvania.

ANSWER.—The literature on eruptions due to methenamine (hexamethylenamine) is very limited. There are several reports of dermatitis venenata due to the use of this drug in "accelerators" in the vulcanizing of rubber. One textbook (Andrews, G. C.: *Diseases of the Skin*, Philadelphia, W. B. Saunders Company, 1930, p. 331) says: "Hexamethylenamine may produce localized erythematous lesions or generalized morbilliform eruptions." This is the only reference to dermatitis medicamentosa due to this drug that has been found.

The description given corresponds to a real psoriasis in all but one particular, the statement that the primary lesion is a "small red papule or bleb." This may be a loose use of dermatologic terms, and there are reports of vesicles in early psoriasis; but they are rare and would argue against, rather than for, that diagnosis. Allowing the use of the term bleb to pass as an inaccuracy, the description fits an early psoriasis perfectly. There are no records of such an eruption caused by use of methenamine.

The scaly eruptions due to the arsphenamines and bismuth compounds form patches at first in some cases; but these tend to become confluent and progress to a widespread exfoliative dermatitis.

TENOSYNOVITIS OR TENDOVAGINITIS

To the Editor:—A few days ago a white man, aged 51, an accountant, came to me complaining of swelling in his wrists. About three months ago he noticed small lumps, like shot, under the skin on the back of both hands on the radial side of the wrist joint. He had had no pain in them until about three weeks ago, when he had some aching in them at the time that he had the grip. The aching then disappeared but started to reappear about two weeks ago. The aching has been gradually getting worse and he has noticed that the swellings have been getting larger. The aching runs up the arm along the radius to the midforearm and down the hand to the knuckle of the first and second fingers. For the past two days the dorsum of the hands has been swollen. There is no history of injury or occupational disease. The past history does not lend any aid in the diagnosis nor does the general physical examination, urinalysis, blood counts or Wassermann and Kahn tests. On examination the two wrists appear to be symmetrical, the tumors and swelling appearing alike in the two extremities. There is no discoloration. There are four or five small tumors below the skin at the end of the radius dorsally; they have the appearance somewhat of varicose veins but they are not compressible. They feel like cysts or ganglions, being soft and movable. I surmise that they are synovial cysts of the wrist but because they are bilateral I wondered whether this condition might not be characteristic of some particular syndrome or disease. Please inform me if such is the case and also advise me of the supposed cause and the treatment.

WILLIAM BLOUNT TURNER, M.D., Wooster, Ohio.

ANSWER.—It is probable that this patient is suffering from one of two conditions, either a tuberculous tenosynovitis of the extensor tendons and their sheaths or a stenosing tendovaginitis at the radial styloid process. The description does not state whether the tumors that are felt follow the line of the abductor pollicis longus or whether they are more irregularly distributed over the hand, and for that reason it is

difficult to make an exact statement with reference to the diagnosis.

Tuberculous tenosynovitis is not uncommon at this location and may be bilateral. It has been well described by Kanavel (*Surg., Gynec. & Obst.* 37:635 [Nov.] 1923). Treatment of the condition, as Kanavel emphasized, is careful and accurate dissection and excision of the involved tendon sheaths, with removal of the visceral as well as the parietal layers; in other words, of the synovial covering of the tendon as well as the synovial lining of the fibrous sheath. If such an operation is carefully performed and the wound accurately closed after complete excision there is every reason to hope for prompt healing and freedom from recurrence.

Stenosing tendovaginitis was first described by de Quervain. There is an excellent paper on the subject by Harry Finkelstein (*J. Bone & Joint Surg.* 12:509 [July] 1930). In this condition a thickening and narrowing of the synovial sheath takes place, probably as the result of repeated trauma, possibly complicated by the presence of a low grade infection. The marked pain and tenderness over the abductor longus and extensor brevis pollicis are exaggerated by holding the flexed thumb under the flexed fingers and drawing the closed hand into ulnar adduction. The treatment of this condition is incision of the dorsal carpal ligament over the involved tendons. This incision opens the constricted tunnel through which the tendons glide and permits them to move back and forth without pain.

TREATMENT OF CHRONIC CONSTIPATION

To the Editor:—I have a patient, a man aged 49, who has been troubled with constipation for probably twenty years. He is in apparently excellent health otherwise. At one time he took some kind of laxative, pill or tablet, at least every other night. For the past five years, however, no drugs have been taken, fairly satisfactory bowel movements being obtained by taking daily one tablespoonful of liquid petrolatum with agar and from two to four teaspoonfuls of psyllium seed. During the past few months the bowel movements have not been so good. Occasionally the patient has a slight headache, a bad taste in the mouth, coated tongue and ribbon stools. He does not appear to be neurotic. There is no gastric disturbance, no mucus, no pain, and but little tenderness. Roentgen examination shows a spastic colitis. The patient is an office worker, though he does quite a little outdoor walking. Is it harmful to use psyllium seed over so long a period? Roughage is contraindicated in spastic colitis, yet without the roughage (or drugs) there will be no bowel movement. What treatment should I recommend? Please omit name.

M.D., Chicago.

ANSWER.—Roughage is contraindicated only when the colon is actually in a spastic condition. On the other hand, it is a preventive of "spastic colitis" when used in intervals between attacks. During an attack of spasm, a smooth diet should be used, with sufficient liquid petrolatum to render the bowel movements soft. When the attack has passed, it is desirable to add roughage to the diet—not only psyllium seed but also fruits and vegetables. The most tender forms of these are added first; and, if these are well borne, the coarser vegetables are added up to the point of tolerance, which in any case can be determined only by experience. If such a patient can eat a fairly coarse diet, he is likely to be quite free from any tendency to relapse. If the intestine is handicapped by some anatomic abnormality, it may not be possible to push the roughage beyond a certain point. Such a patient may need to be helped along by bran, psyllium or liquid petrolatum, used more or less indefinitely.

EFFECTS OF ANESTHESIA ON KAHN AND WASSERMANN TESTS

To the Editor:—How long after ether anesthesia do the Kahn and Wassermann tests on the blood give false positive reactions? Do ethylene and other gas anesthetics give false positives? If so, for how long a period? Does any other form of anesthesia give false reactions with the Kahn and Wassermann tests for syphilis? Kindly omit name.

M.D., Joliet, Ill.

ANSWER.—The concept that a person, when under anesthesia, may give false positive serologic reactions for syphilis is an old one. It is generally believed that anesthesia increases the anti-complementary properties of the blood, which in turn requires special care in the performance of the Wassermann test to avoid false positive reports. The Kahn test, not being influenced by anti-complementary properties of serum, is still less affected by anesthesia. There is no conclusive experimental evidence for the assumption that either test gives false positive reactions during anesthesia. Nevertheless, as a factor of safety, no serologic reaction obtained during anesthesia should be depended on, particularly if not supported by clinical observations. At least forty-eight hours should elapse between a general anesthetic and the drawing of blood for a serologic test.

POSSIBLE TRAUMATIC SUBDURAL HEMORRHAGE

To the Editor:—A 4 year old girl, apparently in good health up to two weeks before, was seen, March 29, complaining of frontal headache and vomiting (not projectile). The temperature was normal, the pulse rate 90. When seen, March 30, at 10 a. m., headache persisted, as did the vomiting; the temperature and the pulse rate were the same, but the child appeared more apathetic and drowsy. The face was quite flushed. The pupils were equal and regular; they reacted to light and in accommodation, but sluggishly to the former. There was a positive *tache cérébrale*; the knee reflex was absent; the Babinski reflex was negative. The child was yawning about every ten minutes. At 3 o'clock the same day the child had lapsed into a deep coma, from which she could not be aroused. The temperature now was 102 (rectal). The right pupil was dilated, the left was contracted, and both were fixed. There were convulsive seizures involving the right arm and leg at intervals of half an hour followed by a position of tetany (opisthotonos, fingers clinched with thumb drawn under, and jaw fixed), which was maintained for three or four minutes. Lumbar puncture was done at 6:30 p. m. and 15 cc. of clear fluid under increased pressure withdrawn. It was negative for organisms on smear and culture; there were many red blood cells; the cell count was 20. The temperature now was 105. At 7:30 p. m. the child died. On going more deeply into the history I learned that three weeks before the child had been "grazed" by a truck and knocked down in the street and carried home to her mother, who found no evidence of any injury. The child was severely reprimanded and spanked. From then on the child showed a progressive loss of interest in her dolls, her playmates and everything in general, together with an increasing nervousness. About one week later the child began to cry out in her sleep and also grind her teeth while sleeping. This hydrocephalic cry was more noticeable as the headache made its appearance. These are all the data available. What diagnosis would you suggest? Please omit name.

M.D., New Jersey.

ANSWER:—In most states this would have been a coroner's case and the coroner would probably have ordered a necropsy. Even if the child apparently was not seriously injured at the time that she was knocked down by the truck she may well have had a slowly developing subdural hematoma. It is, of course, possible that she had tuberculous meningitis and that the injury was a coincidence. However, if the cell count was only 20 it is not likely that any kind of meningitis was responsible for such severe symptoms. In the absence of a necropsy one must, of course, admit other possibilities, such as a brain tumor which had not previously caused symptoms. Since nothing is said about the eyegrounds, it is assumed that choked disk was not present. With the data given, the diagnosis favors traumatic subdural hemorrhage.

DIFFERENTIAL DIAGNOSIS BETWEEN ANTEMORTEM AND POSTMORTEM THROMBI

To the Editor:—I am exceedingly anxious to learn by what scientific laboratory tests the differential diagnosis can be made between an antemortem and a postmortem blood clot and whether or not the examination of a postmortem blood clot, made immediately after death, can be distinguished from a blood clot found in a body dead at least twelve or more hours? Can it be determined by the postmortem examination that a body had been alive at the time that it is alleged to have come to its death by falling or being thrown from a great height as against the claim that the body came to its death, several hours before, by falling or being thrown against a stone wall and suffering a compound fracture of the skull? It has been claimed by pathologists that they are able to determine that the body was alive when it was thrown from the height in question, by reason of the fact that they found blood in certain organs. How can this proof be sustained in court? If you are unable to give me this information will you kindly mention certain authors whom I might consult? I will be pleased to reimburse you for any reasonable expense attached to your investigation or answer to these questions. Thank you very kindly for the courtesy of a prompt reply. Please omit name.

M.D., Illinois.

ANSWER:—In answer to the first part of the first question it may be said that, generally speaking, an antemortem clot—thrombus—is firmly adherent at some point or points of the vessel or the heart cavity within which it has been formed. It may vary in appearance and consistency according to age and other circumstances. If formed shortly before death by extension from an older thrombus it may be largely fibrinous and somewhat elastic, and if it is in the heart there may be marks to show that it has been subjected to the heart's action. After death the blood tends to settle in dependent parts; in the heart and the large veins the red cells will be at the bottom, and the clot above may be more or less yellowish. These layers may possibly give some indication of the position of the body when the blood clotted. Postmortem clots are not adherent to the wall of the vessel or heart cavity with which they are in contact.

The second part of the question does not seem quite clear. It appears to refer to the possibility of distinguishing between blood clots found immediately after death and later. To distinguish a postmortem clot found immediately after death from one found in a body dead for, say, twelve hours is not possible.

In answer to the second question it may be said that, if the body has been dead several hours before its precipitation from

the height, immediate examination might reveal unmistakable signs of earlier death, such as more or less well developed postmortem rigidity, postmortem lividity, and possibly even beginning decomposition.

The third question is not definite enough to warrant further consideration than to say that blood may be found in various organs and places in deaths from various causes and under various circumstances.

PROTECTION OF EAR AGAINST EXPLOSIVE NOISES

To the Editor:—Please give me information regarding the best method of protecting the ears when engaged in target practice with small arms, such as pistols, revolvers and rifles. There are on the market several "ear plugs" for this purpose. Which do you consider to be the most proficient? Is the use of cotton sufficient for this purpose? If so, should it be dry or moistened with glycerin or some other substance? Target practice is the chief source of recreation of this patient, and the continued ringing in the ears for the past three days has been diagnosed by an otologist as due to nerve disturbance from this cause. Please omit name.

M.D., California.

ANSWER:—While many appliances have been devised to use as ear plugs to prevent damage to the drum membranes in the presence of rifle or cannon shot, the use of a cotton pledget moistened with glycerin has been found to be about as good as anything. If very loud sounding guns are used, it is sometimes better to open the mouth at the time of the discharge of the cannon. It is quite possible that producing intense noises near the ears will cause a degeneration of a certain portion of the organ of Corti and the auditory nerve itself, thus giving rise to a distressing tinnitus.

WIDAL TESTS AND EXAMINATIONS OF FOOD HANDLERS

To the Editor:—The city health department of San Diego, Calif., requires an examination of food handlers. The only laboratory work required is a specimen of blood for Wassermann and Widal tests, and a mouth smear for Vincent's. This, in my opinion, is insufficient; most certainly this work should cover, if it is to be comprehensive, sputums for tuberculosis and possibly throat cultures for diphtheria. Please tell me specifically whether or not the Widal test is of any value in this connection except in possible occasional value in picking up an individual who is coming down with typhoid. In my opinion, a large portion of Widal tests are positive because of former attacks of typhoid or inoculations against typhoid, which have been given in such widespread amount, especially to ex-service men. Is the Widal test of any value in this condition? Please omit name.

M.D., California.

ANSWER:—A Widal test used in the examination of food handlers, except for a possible laboratory diagnosis of typhoid and paratyphoid fever, is of little or no value. The fact that a person shows a positive Widal test and has no clinical evidence of typhoid or paratyphoid fever shows that he probably has received typhoid immunization or has previously had an attack of the disease.

The proper method to use to detect typhoid carriers is to examine specimens of feces and urine, preferably collected after elaterin catharsis. This method should be used also in detecting carriers of paratyphoid fever, and bacillary and amebic dysentery.

Some cities require a physical examination of food handlers, and suggestive chest observations are followed up by a careful physical and sputum examination.

OPTIMUM TIME FOR BLOOD TRANSFUSION

To the Editor:—I should like information concerning the time when a transfusion of blood serves its greatest value to the recipient. In the case of an operation of election, I want to know whether the transfusion should be done immediately or twelve, twenty-four or forty-eight hours before the operation. I have in mind a patient with tuberculosis of the spine who is to be subjected to a long operation of the Hibbs, Albee or the combined types; another who should have an arthroplasty of the hip; another who should have a laminectomy for a suspected spinal cord tumor. As a prophylactic measure a blood transfusion is advisable. Should it be done twelve, twenty-four or forty-eight hours before the spine operation? In short, I want to know when the recipient derives maximum preoperative benefit from a blood transfusion. Please omit name.

M.D., Illinois.

ANSWER:—Transfusions are given preliminary to extensive operations such as are mentioned usually as a prophylactic against shock. In addition they will of course raise the hemoglobin and red cell count, improve the patient's general condition and make the patient a more favorable operative risk. There has been some difference of opinion as to the ideal time to employ this procedure, but experience has shown that the greatest benefit is derived when the transfusion is given immediately prior to the operation. As soon as the transfusion is completed, the anesthesia is begun. Patients treated in this fashion usually show no evidence of shock. Large doses of

blood should be employed: for adults, between 750 and 1,000 cc. For extremely extensive and shocking procedures it is occasionally necessary to repeat the transfusion after the operation.

MONILETHRIX

To the Editor.—A child, aged 3 years, has a disorder of the scalp. The hairs are scanty, coarse and brittle. There are also small papular elevations in the scalp. A diagnosis of monilethrix has been made at a skin clinic. What are some therapeutic measures known for this condition? Please omit name. M.D., St. Louis.

ANSWER.—Monilethrix is familial and probably an hereditary anomaly like ichthyosis. No effective treatment is known. Epilation by roentgen rays has been reported of benefit in some cases, without causing any improvement in others. Stimulation by means of ointments containing salicylic acid, resorcinol monoacetate, sulphur and one of the tars may be tried. A cautious trial of thyroid or anterior pituitary extract or a combination of them might be made. A good article on this subject is that by G. M. MacKee and Isadore Rosen (*J. Cutan. Dis.* 34:444 [June], 506 [July] 1916).

AUSCULTATION IN EMPYEMA

To the Editor.—1. What is one to note on auscultation in empyema with an underlying pneumonic condition of the lung? 2. In pleurisy with effusion without a pneumonic process? 3. In empyema without a pneumonic process? In all three cases, granted that the bronchi are not plugged with tenacious mucus, and breath sounds are transmitted to the pneumonic process. GERALD A. CYR, M.D., Waterville, Maine.

ANSWER.—1. The layer of pus usually obscures or obliterates the breath sounds and muffles voice sounds; but, in places where the pus layer is thin, bronchophony may be present.

2. Breathing is faint or absent. Voice sounds frequently are nasal-egophony.

3. The breath is usually inaudible. The voice sounds are faint or nasal. The whispered voice is better transmitted through serous than through purulent exudate.

PERSISTENT PAIN AFTER HERPES ZOSTER

To the Editor.—A woman, aged about 50, had an attack of herpes zoster along the course of the lumbo-abdominal nerves, eighteen months ago. The eruption disappeared in the usual time but the severe pain still persists. Has there been any treatment discovered that will relieve these pains other than severing the posterior nerve roots at the spine? Please omit name. M.D., Texas.

ANSWER.—Paravertebral injection of a local anesthetic and, if this is but temporarily successful, paravertebral injection of alcohol might render the operative procedure unnecessary.

ELECTROCARDIOGRAPHIC APPARATUS

To the Editor.—Is there a practicable portable electrocardiograph on the market? Is the Sanborn machine accurate and sufficiently rugged for practical use? JAMES L. ROBINSON, M.D., Los Angeles.

ANSWER.—Portable electrocardiographs are of the amplifier or the string galvanometer type. Several practicable machines of both types are now available. The Victor (amplifier) and the Sanborn (string galvanometer) are among the most satisfactory instruments. Each, arranged in convenient carrying cases (the Victor in two, the Sanborn in three), is equipped with battery and charger and will operate anywhere; the total weight is about 100 pounds. These are more satisfactory for portable work than the electrical models. The advantages and disadvantages of these types of electrocardiographs are discussed in "The Fundamentals of Electrocardiographic Interpretation," by J. Bailey Carter (*THE JOURNAL*, Oct. 1, 1932, p. 1167).

RETENTION OF URINE IN DEMENTIA PARALYTICA

To the Editor.—A man with dementia paralytica in the advanced stage suffers from retention of urine. The bladder is distended up to the umbilicus. Conservative measures, such as hot applications to the bladder region and continuous baths, failed to provoke spontaneous urination. Should the patient be catheterized? One of my colleagues states that the urologist Hugh H. Young expressed an opinion that patients with dementia paralytica with retention of urine should never be catheterized, because of danger of infection (cystitis?), and also because their bladders do not rupture. Should the patient be left alone or catheterized? Please omit name. M.D., Pennsylvania.

ANSWER.—A patient with retention from a cord bladder may be allowed to run along until the bladder overflows. This may decrease the chances of infection but may increase the possibility of renal damage due to back pressure.

In many of these patients, sooner or later, infection develops even though they are not catheterized. The use of an indwelling catheter, left in place for some weeks, may improve the bladder function to some extent. However, the prognosis in these cases is bad as far as function of urination is concerned.

BLOODY SEMEN

To the Editor.—A man of 70, who had a suprapubic (central lobe) prostatectomy performed five years ago with a histologic report of adenoma, now for the past year and a half has ejaculated bloody or chocolate colored semen at intercourse. What is the probable cause of this? Please omit name. M.D., Minnesota.

ANSWER.—It is not likely that the prostatectomy of five years ago has anything to do with the present bloody ejaculations. The posterior urethra should be examined with a cystourethroscope. Often distinct pathologic conditions, such as tumors, either benign or malignant, or areas of granulation or ulceration, may be found. Of lesser frequency may be mentioned small pieces of calculi broken off from a bladder calculus, which may be lodged in the urethra. At times the blood may be due to a seminal vesiculitis.

"USE OF THYROID"

To the Editor.—I was much interested in the question put to you by a physician from North Carolina, which under the title "Use of Thyroid" appeared on page 1797 of *THE JOURNAL*, June 3, and in your reply. The question I thought thoroughly pertinent. With your reply I cannot entirely agree. If you care to present my views to the doctor through your columns, I shall be glad to have you do so.

In the first place, I think it fair to assume that the doctor means that the dose of thyroid mentioned was per day, not per week. The important point about dosage you have not raised; namely, What brand of thyroid was used? The different brands vary greatly in strength. In calorogenic activity, for example, I have found that 1 grain of Armour's preparation is equivalent to about 3 grains of Burroughs Wellcome's or to two-thirds grain of Parke Davis's. So unless the brand is known, dosage is meaningless.

I would take issue with your advice that intravenous thyroxine be substituted. I do not believe that thyroxine intravenously, or any other way, has any place in the treatment of hypothyroidism. If thyroid is really needed, thyroid by mouth will work. However, I am far from convinced that the doctor's patient needs thyroid at all. There are not a few normal people or people without thyroid disease whose basal metabolic rates run as low as -22. Indeed, I practically never see the full-blown picture of myxedema except when the basal metabolic rate level is well below -30. The present patient may well be one whose low metabolism is not caused by any thyroid lack. Thyroid therapy therefore may be simply making her slightly thyrotoxic. A feeling of well being is often a manifestation of thyroid excess. Though loss of appetite isn't the usual finding, it nevertheless occurs in some thyrotoxic persons. The doctor doesn't tell what happened to the metabolic rate when thyroid was given. This it is important to know as well as the true dosage. Presumably it rose. Why the heart rate didn't rise I cannot say. Perhaps she has heart block and it cannot go up. We have observed one such case in the Thyroid Clinic of the Massachusetts General Hospital (Aub, J. C., and Stern, N. S.: *Thyroid Extract and Heart Block*, *Arch. Int. Med.* 21:130 [Jan.] 1918). An electrocardiogram would throw light on this. It would also show whether the T wave changes characteristic of myxedema are present. Another laboratory finding which may be helpful in distinguishing between genuine hypothyroidism and other forms of hypometabolism is the blood cholesterol. Dr. L. M. Hurxthal has found elevations of over 250 mg. per hundred cubic centimeters in true hypothyroidism, and normal levels not over 200 mg. per hundred cubic centimeters in non-myxedematous low rate cases. His remarks will appear in the *New England Journal of Medicine* in the discussion of the symposium on endocrinology of the Section on Medicine of the Massachusetts Medical Society held June 6.

My recommendation in the present case would be that, for the time being at least, thyroid be discontinued and some cause for the symptoms, other than hypothyroidism, be sought.

J. H. MEANS, M.D.,
Massachusetts General Hospital, Boston.

AFRICAN TRIBES WHICH LIVE ON BLOOD

To the Editor.—In *THE JOURNAL*, April 15, Dr. Halton inquires about an African tribe which lives on blood. The Masai probably were meant. If the inquirer will get a copy of "The Physique and Health of Two African Tribes," by Gilks and Orr, Medical Research Council Special Report Series 155, he will find all the dietary information he desires.

"The staple articles of diet are meat, milk and blood. The blood is drawn from the living animal by puncture of the jugular vein with an arrow."

"The average diet of Masai males of the warrior class is: meat, 1,135 Gm.; milk, 2,000 cc.; blood, 50 cc."

A neighboring tribe—the Kikuyu—live on an almost exclusive vegetarian diet of "cereals, tubers, plantains, legumes and green leaves." The commonest diseases found among the Kikuyu were bronchitis and ulcers, among the Masai intestinal stasis and arthritis.

Quotations are from the mentioned report, which may be purchased from His Majesty's Stationery Office, London, for 2 shillings.

B. B. MICHENER, M.D.,
Friends Mission Hospital, Kisumu, Kenya.

Italian renaissance, and of its progress in the seventeenth, eighteenth, nineteenth and twentieth centuries. There is steady stress on the clinical tendency of Italian medicine as contrasted with the theoretical and laboratory trends of northern Europe. Among the numerous distinguished Italian physicians of whom thumb-nail sketches are given, a few may be selected for special mention: Vesalius (1514-1564), who showed that Galen's observations were based exclusively on the cadavers of animals; Fracastoro, who wrote the famous poem "Syphilis, sive morbus gallicus" (1530); Malpighi (1628-1694), the first great medical scientist who used the microscope in his studies; Morgagni (1682-1771), founder of modern pathologic anatomy; Spallanzani (1729-1799), who discovered the possibility of generation by division; Flaiani (1741-1808), who contributed largely to the discovery of exophthalmic goiter; Bassi (born in 1773), a pioneer in micropathology; Cesare Lombroso (1839-1909), famous for his studies in psychiatry and the founder of Italian anthropologic studies, and Guido Baccelli (1832-1916), pathologist, teacher and humanist.

Der Coronarkreislauf: Physiologie, Pathologie, Therapie. Von Dr. Max Hochrein, Professor an der Universität Leipzig. Paper. Price, 24 marks. Pp. 227, with 54 illustrations. Berlin: Julius Springer, 1932.

In this book the author has supplemented a great volume of clinical and experimental work in the Leipzig clinic with a carefully prepared outline of the literature dealing with coronary circulation. The first section, devoted to the consideration of anatomy, is divided into discussion of the coronary arteries, coronary veins and lymph circulation. Under this heading is also considered the mechanism of nervous control. These subjects are exhaustively covered. The second section is devoted to a presentation and discussion of experimental research on the coronary. This section contains the greatest amount of original work of the author. In this division the author reports the experimental and clinical work in physiology and pharmacology of the circulation. Great importance is attached to this because of the close relationship between the circulation of blood itself through the heart and the heart action. The third section is devoted to the discussion of the coronary system itself and the discussion is taken up under the headings of pathologic physiology and pathologic anatomy, with the final part devoted to the clinical aspects of coronary disease. To the clinician, the final section is of greatest interest. The fund of material is well displayed in the representative cases cited. This material is presented by a discussion of the special disease conditions, which includes a study of general symptomatology and electrocardiography in coronary disease. The book is closed with a discussion of special therapy in the conditions discussed. The work is complete and well written. The bibliography is especially complete. While there is little new material in this book, the great care with which the material has been collected and presented makes this a noteworthy book on coronary disease.

A Manual of Embryology: The Development of the Human Body. By J. Ernest Frazer, F.R.C.S., Professor of Anatomy in the University of London. Cloth. Price, \$3. Pp. 486, with 282 illustrations. Baltimore: William Wood & Company, 1932.

This "manual" has three characteristics: 1. It is written for students by an examiner and teacher who invites his students to look at embryos instead of at pictures or descriptions. 2. It is condensed. It is not a complete review and storehouse of information but an introduction helping the young students to form intelligent and connected mental pictures of the developing embryo. 3. Regions of the body are presented instead of structures or systems of structures. This method is followed partly because it is believed to be more convenient and useful to the student and partly because the study is based on the author's preparations. The first section (110 pages) is devoted to early and general development of the embryonic period (first two months), followed by a chapter on general growth throughout intra-uterine life and another on maternal connections—placenta, fetal membranes and parturition. This part is more condensed than in most textbooks. The second part (364 pages), is devoted to the development of regions—and organs and systems. (It is impracticable to follow the regional method exclusively.) The illustrations are nearly all original pen and ink sketches or diagrams made by the author. A valuable feature is the

representation of a structure at several successive stages of its development with numbers appended to each part representing the length of the embryo in millimeters. The manual on the whole represents an attempt at simplification and can be recommended for the use of medical students in the general or basic medical course. Students with special interests will want to refer also to larger textbooks.

Recent Social Trends in the United States. Report of the President's Research Committee on Social Trends. In two volumes. With a foreword by Herbert Hoover, President of the United States. Paper. Price, \$10. Pp. 1568, with illustrations. New York & London: McGraw-Hill Book Company, 1933.

This is a great symposium of views by leading authorities as to the trend of various interests in this country during the last twenty-five years. The essays and sketches are exceedingly uneven in their content and presentation. Particularly unfortunate was the choice of Harry H. Moore, director of the work of the Committee on the Costs of Medical Care, to prepare the section on medicine. Mr. Moore was long since committed to a certain definite point of view which has not changed, and his contribution to this series merely serves to emphasize further his personal bias for state medicine. It is true that there has been a trend toward state medicine, but it might be well in connection with the discussion of this trend to point out that the vast majority of the American medical profession is opposed to the trend and that nothing is inevitable in the field of social changes. The two great volumes composing this symposium offer a vast amount of statistical material and data, so that they constitute an invaluable reference work for every one interested in discussions in this field.

Set the Children Free! By Fritz Wittels. Translated by Eden and Cedar Paul from the fourth German edition. Cloth. Price, \$2.75. Pp. 242. New York: W. W. Norton & Company, Inc., 1933.

This is an English translation of the fourth original German edition, which was revised by the author for this purpose. The manner of presentation and point of view of the author are familiar to many in this country, as he lectured extensively throughout the United States and is also known through his writing on psychoanalytic problems. This is intended as a textbook for parents of normal children and to be used as a guide in the psychologic care of children from a psychoanalytic standpoint. The author attempts to present the mental life of the child and the laws under which he functions; also the manifold problems of childhood and how the parents can help the child to meet them. However one may feel as to the correctness of the author's views, one cannot help but appreciate that Dr. Wittels has a sympathetic understanding of most of the practical problems of children. The text covers the usual list of subjects discussed in works on child training as well as problems relating to stepchildren, illegitimate children, orphans, and children of divorced parents. The last chapter is a brief account of the educational system of Germany and Austria and the recent changes it has undergone and the suggested changes for the future. As in most books on this subject, the reader must not be carried away by what appears to be logical. A judicious parent reading this book must examine carefully the evidence presented. With the author leading the children in conquest for freedom, he must weigh the facts. The work is stimulating and will materially assist the reader to appreciate the mutual problems of parenthood and childhood.

Die Röntgendiagnostik der männlichen Harnröhre. Von Dr. Erich Langer, dirigierenden Arzi der dermatologischen Abteilung am Krankenhaus Berlin-Britz. Paper. Price, 9 marks. Pp. 92, with 60 illustrations. Leipzig: Leopold Voss, 1931.

This small book demonstrates in a brilliant manner the pathologic changes in the male urethra which can be visualized by roentgenography. These changes are often in the nature of a surprise. No other method will show with the same clarity the extent and relations of strictures, para-urethral canals and congenital anomalies. The technic of roentgenography of the male urethra is not simple, but it has been admirably mastered and described by the author. The illustrations are exceptionally clear and each carries a legend in French, German and English. The volume can be heartily recommended and will well repay careful study of its contents.

Review of Legal Education in the United States and Canada for the Year 1932. By Alfred Z. Reed, Staff Member in Charge of the Study of Legal Education. Paper. Pp. 67. New York: Carnegie Foundation for the Advancement of Teaching, 1933.

"Balancing the budget" is a sufficiently familiar phrase. In the Annual Review of Legal Education, however, Dr. Reed makes use of it in an unaccustomed sense, for he applies it not merely to the fiscal operations of law schools and universities but to the broader aspects of the problem of legal education regarded from the point of view of society as a whole. He asks what proportion of the cost of his education should be met by the student himself and what part by the voluntary or involuntary contributions of others. Should public funds be devoted to vocational and professional education irrespective of the number of specialized experts that our current economic system can absorb?

The author discusses at length the problem of student selection, declaring that the simplest, most infallible method of determining whether an individual is qualified to practice a profession is to let him try, and acknowledging that no system of selection can ever be devised so scientifically accurate that it will leave in the profession every one who ought to be there and eliminate every one who ought not. He gives two reasons for rejecting the policy of "laissez faire." First, because of its unfairness to the public, whose interests would often be inadequately served, and, second, because of its cruelty to the individual, who may discover his error only after a great waste of time and money and when it has become almost impossible for him to prepare himself for another career. Granted that authority may intervene to bar the path to a chosen vocation, the later in a candidate's preparation that this barrier is erected the less likely it is to be an efficient protection to society; the earlier, the less injurious to the applicant himself, for he may the more readily adapt himself to another objective.

The effect of the depression on law school attendance is shown by a decrease of 15 per cent from 1928 to 1931. Figures for 1932 are still lower.

Comparative tables show the present requirements for admission to the bars of sixty states and Canadian provinces, and changes in the number of law schools of different types, and of their students, during the last forty years.

In the United States and Canada, 88 schools are classified as full time, while 107 are part time, offering instruction at hours convenient for self-supporting students. Current standards of the American Bar Association and of the Association of American Law Schools are found in an appendix.

The Review of Legal Education is distributed without charge by the Carnegie Foundation, 522 Fifth Avenue, New York.

Le virus tuberculeux. Par le Dr. Jean Vaitls, professeur de pathologie à l'Université d'Athènes. Bibliothèque de pathologie sous la direction de Léon Bernard, professeur de clinique de la tuberculose à la Faculté de médecine de Paris. Préface du Dr. Calmette. Paper. Price, 36 francs. Pp. 241. Paris: Masson & Cie, 1932.

This manual is a partisan exposition of the views of the Pasteur Institute group on the bacteriology and immunology of tuberculosis. The first chapter deals mainly with various normal and abnormal forms of the tubercle bacillus, with special emphasis on granular and non-acid fast forms. The second chapter is devoted to the description of filtrable forms, and methods are given for successful filtration. An interesting point is the statement that BCG cultures have only a few filtrable elements. The author gives detailed experimental filtrations, out of which typical bacilli and virulence were obtained by animal passage. The third chapter is devoted to heredity and maternal transmission. The author dispenses the ideas of hereditary resistance and hypersensitiveness but states that a mother with advanced progressive tuberculosis may pass the virus to the fetus more often than usually thought, the lesions in the infant differing from those due to virulent bacilli. The last chapter is on antituberculous vaccination with the "bacillus bilie de Calmette-Guérin" (BCG). The discussion of technical methods is cursory, and most of the text is given to quotations of certain experimental results and their confirmation, and a refutation of contradictory work. In this book, as in other writings from the same source, any contrary results are imputed to ignorance and error. The statistics presented do not vary in any way from those previously published

by the originator of this method of vaccination, and those interested can find them in recent English publications. The final and all important thesis of the book—that prophylaxis in tuberculosis is to be gained by the use of living, attenuated, nonpathogenic organism of fixed virulence, to be used as a vaccine—is reached by means of the views exposed gradually throughout the book. The author is convinced of the existence of granular and filtrable forms of the tubercle bacillus but does not credit the American dissociation forms; he believes, in spite of a return to virulence of many cultures by animal passage, and the transfer of a virus from mother to child in utero, that BCG is an organism of fixed virulence, all experimental work to the contrary notwithstanding. It is therefore the answer to the long search for a suitable prophylactic method. The story is a good, one-sided view which almost reaches the point of propaganda.

Chemistry of the Opium Alkaloids. By Lyndon F. Small, Consultant in Alkaloid Chemistry, United States Public Health Service, University of Virginia. Assisted by Robert E. Lutz, Associate Professor of Chemistry, University of Virginia. Prepared by direction of the Surgeon General. Supplement No. 103 to the Public Health Reports. U. S. Treasury Department, Public Health Service. Cloth. Pp. 375. Washington, D. C.: Supt. of Doc., Government Printing Office, 1932.

As the title indicates, this is a book on pure chemistry. There is no suggestion of pharmacology or therapeutics. The material has been assembled in the course of a systematic study of the literature of the opium alkaloids and gives the impression of completeness and accuracy. The nomenclature adopted is that most commonly used in contemporary publications; in case of doubt, the German name has been accepted. This, as the authors state, leads to some unavoidable inconsistencies, but one has no difficulty in finding a discussion of the substance desired. This is a valuable source book of references on alkaloid chemistry, but especially the chemistry of opium. The authors have included a list of books on alkaloid and synthetic chemistry seldom cited in bibliographies, which in itself is of great value to chemists, research workers and others interested in chemical literature. The book is divided into two parts: 1. The benzylisoquinoline and minor alkaloids, which includes the chemistry of papaverine, xanthine, laudanose, laudanine, laudanidine, codamine, tritropine, narcotine, gotarine, tarconine, gnoscopine, oxynarcotine, narceine, hydrocotarine, cryptopine, protopine, papaveramine, lanthopine, meconidine, rhoeadine and aporeine. 2. The phenanthrene alkaloids, which includes morphine, pseudomorphine, codeine, neopine, porphyroxine, the halogenomorphides and halogenocodides; the isomers of morphine and codeine, the thiocodides, the desoxycodones, codeinone, hydroxycodeinone, apomorphine, the methylmorphimethines, morphol and morphenol, thebaine, thebainone, thebenine, morphothebaine, phenyldihydrothebaine, and the constitution of morphine. The references are exhaustive and include 1,976 or more. It is quite impossible to appreciate the vast amount of work necessary to complete a work of this kind, or to evaluate it too highly. It is a book that should be in every chemical, pharmacologic and pharmaceutical library and is recommended to every one interested in the subject.

Grundzüge einer Konstitutionsanatomie. Von Professor Dr. Walter Brandt, Abteilungsvorsteher am Anatomischen Institut der Universität Köln. Paper. Price, 28 marks. Pp. 382, with 135 illustrations. Berlin: Julius Springer, 1931.

Professor Brandt is concerned not with diathesis or predispositions of human bodies to disease but with the dynamic constitution of living organisms. It is not a medical treatise based on human anatomy and its variations but a contribution to fundamental biologic philosophy. The phenomena that make up the life history of a living organism, plant or animal represent the play of energies through structural forms in a series of processes, which constitute its life history. These processes follow a regular sequence, each completing itself and giving place to others. They fall into three categories: (1) embryologic formation, (2) growth and (3) differentiation. Through them, all the various "types," genera and species of animals and plants arise, live through their life changes and die. Professor Brandt seeks to understand the causes underlying, producing and governing these phenomena. Obviously there is involved a space factor—form or "orthotopic potential"; and also a time factor—speed of determination; i. e., rate at which

stage follows stage in the life history or metamorphosis. The laws of embryologic formation are revealed in the whole science of experimental embryology (see Brandt's law of specific induction, 1927). Growth is influenced by the environment, external and internal (hormones). The conditions of growth and differentiation are discussed and illustrated by citation of results of experiments on the development of many plants and animals. The author suggests that the familiar systematic classifications based on the forms of adults be supplemented by another based on something more dynamic; namely, reactions to experimental embryologic procedures. In this, "isodromes" or "determinative equivalents" would be classed together. Through experimental embryology he hopes to arrive at experimentally provable relationships, which will add much to classification from the standpoint both of types and of heredity. The book is the product of many years of study and independent thought on fundamental biologic problems. As such it will be interesting and valuable to biologists. An extensive bibliography, arranged under the headings that have been listed, will be of value to all biologists.

The Effects on Women of Changing Conditions in the Cigar and Cigarette Industries. By Caroline Manning and Harriet A. Byrne. Bulletin of the Women's Bureau, No. 100. United States Department of Labor, Women's Bureau. Paper. Pp. 187. Washington, D. C.: Supt. of Doc., Government Printing Office, 1932.

This study, made under the auspices of the United States Department of Labor, indicates the effects of the machines on the employment—or rather unemployment—of women in this industry. The book begins with a brief history of the tobacco industry. The manufacture of cigarettes began in 1864, with a total production of twenty million. Today production runs into billions. Most of this book is concerned with an analysis of the way in which unemployment has been brought about. For instance, there were 27,366 cigar manufacturers in 1900 but only 7,552 in 1930. A similar relative decrease took place in the number of cigaret factories. Nevertheless, in the same period of time the production of cigarets rose from 3 billion to 124 billion. During the same period the production of cigars increased only about 6 per cent.

Moderne Therapie der Neurosyphilis mit Einschluss der Punktionstechnik und Liquor-Untersuchung. Von Bernhard Dattner, Dr. med. et jur., Assistent der Klinik für Psychiatrie und Neurologie in Wien. Mit einem Vorwort von Hofrat Prof. Dr. J. Wagner-Jauregg. Cloth. Price, 22 marks. Pp. 334, with 53 illustrations. Vienna: Wilhelm Maudrich, 1933.

This monograph is an expansion of a series of lectures given by the author to English-speaking students. It bears a foreword from Wagner-Jauregg, under whose direction much of the author's work has been done. The major emphasis of the book is, as might be expected, on the fever treatment, particularly with malaria, of dementia paralytica. Comparatively little space is devoted to other methods of treatment or to the application of various types of treatment to other forms of neurosyphilis than dementia paralytica. The contents include descriptions of the technic of lumbar and cisterna puncture, of serologic tests on spinal fluid and their interpretation, of treatment methods (fever by various agents, chemotherapy, subdural treatment); of the application of these methods to and the results obtained in dementia paralytica, tabes, and cerebrospinal syphilis; and a discussion of the pathogenesis, prophylaxis and immune relationships of neurosyphilis. On the whole, the book is complete, compactly presented and valuable to the physician called on frequently to manage neurosyphilitic patients. Newer methods of inducing fever, such as diathermy and short wave radio, are briefly described and the author properly points out that, as compared with malaria, these and other physical fever-producing agents seem, on the one hand, to be less satisfactory than malaria and, on the other, to be as yet in the distinctly experimental stage. The method of presentation is appropriate either for the general practitioner or for the expert neurologist or syphilologist. The author displays more familiarity than many German writers with investigations in other countries; the bibliography of twenty-one pages contains references to forty-seven articles in English. It is regrettable that this monographic form of medical writing is not more widely practiced in the United States. It is an exceedingly valuable method of presenting a subject concisely and at the same time completely.

Economy in Higher Education. Part I: Principles. Part II: Administration. By David S. Hill, Staff Associate, Division of Educational Enquiry, the Carnegie Foundation for the Advancement of Teaching, and Fred J. Kelly, Chief, Division of Colleges and Professional Schools, the United States Office of Education. With a preface by Howard J. Savage, Secretary of the Foundation. The Carnegie Foundation for the Advancement of Teaching in Cooperation with the United States Office of Education, Department of the Interior. Paper. Pp. 127. New York: Carnegie Foundation for the Advancement of Teaching, 1933.

In this volume the Carnegie Foundation and the United States Office of Education have joined forces to analyze the influence of the present economic situation on the agencies of higher education. Publication was made possible by a grant from the Carnegie Corporation. The study consists of two parts, dealing, respectively, with principles and administration. Dr. David Spencer Hill of the foundation contributes part I; part II is the work of Dr. Fred J. Kelly, chief of the Division of Colleges and Professional Schools of the United States Office of Education. Under the caption "Urgent Issues" is presented a thoughtful discussion of the duties and responsibilities of administrative officers and boards of control. Economy and efficiency are defined and the major problem now confronting educational authorities is stated as "the necessity of effecting retrenchment with a minimum of educational loss." Elaborating this idea, Dr. Hill points out the dangers of hasty or sweeping reductions of salaries and indicates avenues by which budgetary adjustments may be accomplished with least risk of destroying permanent values. The President's Committee on Social Trends is quoted to the effect that the costs of education from 1915 to 1929 did not rise so rapidly as other governmental expenditures and that, in numerous ways, savings can be effected without jeopardizing the social function of colleges and universities. A plea is made for the reappraisal of educational aims and for the formulation of a sound philosophy to justify the use of public funds in the support of a coherent program of higher education. In the second part Dr. Kelly describes the waste involved in unnecessary duplication of institutions, departments and courses, especially when these have no more secure foundation than local or personal pride. He calls attention to the lack of means for determining the cost of research, which without question is a large but generally unrecognized factor in university budgets. The final chapter deals with some problems of institutional management, such as employment of personnel, salaries, accounting, purchasing and periodic reports. Nothing could be more timely than this candid presentation of the need for a clearer understanding of the social aspects of higher education, the mechanisms of public support, and the responsibilities of those officers vested with control.

A Study of Nephritis and Allied Lesions. By John Gray. Medical Research Council, Special Report Series, No. 178. Paper. Price, 2s. 6d. Pp. 141. London: His Majesty's Stationery Office, 1933.

The author has attempted to make a satisfactory classification of the nephritides by comparing the clinical histories with the anatomic conditions found after death. There is nothing new about this effort. The literature contains many similar attempts, the most noteworthy of which was made by Vollhard and Fahr. The present writer adds nothing to the exhaustive study of the German clinician and pathologist. He meets with the standard difficulty in all studies of this type, that the clinical course of the disease does not permit one to predict the anatomic disturbances, and vice versa. To overcome this impasse he deliberately selects what appeals to him from each group and rejects what does not fit into his program. In this study there is no attempt to search out etiology or to evaluate treatment.

Peptic Ulcer: Clinical Roentgenology. With Case Histories. By Jacob Buckstein, M.D., Instructor in Gastrointestinal Roentgenology, Cornell University Medical College. Volume X, *Annals of Roentgenology: A Series of Monographic Atlases.* Edited by James T. Case, M.D., Professor of Radiology, Northwestern University Medical School. Second edition. Cloth. Price, \$12. Pp. 417, with 404 illustrations. New York: Paul B. Hoeber, Inc., 1933.

In this edition, many new illustrations and important points have been added, and the literature has been brought down to date. The significance of the niche as a guide for the healing of an ulcer is well stated and amply illustrated. Frequent evidence of the disappearance of the niche in gastric and duodenal ulcers, under medical management, justifies a conservative attitude. The chapter on the study of the mucous membrane of the stomach and duodenum, under normal as well as patho-

logic conditions, is especially well presented. Each case is presented from the clinical, pathologic and roentgenologic phases of ulcer. The operating room and necropsy results are also provided.

Das Quecksilber: seine Gewinnung, technische Verwendung und Giftwirkung, mit eingehender Darstellung der gewerblichen Quecksilbervergiftung nebst Therapie und Prophylaxe. Von Dr. med. Ernst W. Baader, Dozent für Berufskrankheiten an der Universität Berlin, und Dr. med. Ernst Holstein, Gewerbemedizinrat in Frankfurt (Oder). Veröffentlichungen aus dem Gebiete der Medizinverwaltung, Band XXXX, Heft 1. Paper. Price, 12.60 marks. Pp. 239, with 21 illustrations. Berlin: Richard Schoetz, 1933.

This excellent monograph on industrial relations and toxicology of mercury is all the more welcome as it is evidently based on large personal experience. It contains, in addition to an interesting historical introduction, chapters on the chemistry and technology of mercury, the pathogenesis, symptomatology, pathology and treatment of mercurial poisoning, and the hygiene and legal requirements for the protection of those who work with this metal.

Medicolegal

Malpractice: A Tort or a Breach of Contract

(*Trammig v. Howard (Idaho)*, 16 P. (2d) 661)

The defendant-physician was treating the plaintiff for spinal meningitis. A needle that he was using in making an intraspinal injection broke and part of it remained in the patient's back. The defendant operated to remove the lost part of the needle and later he represented to his patient that it had been removed. When the accident happened, July 4, 1926, the plaintiff was a minor, about 19 years old. He became of age, May 13, 1928, and on April 3, 1931, about two years and eleven months later, he instituted this suit. In it he charged that the defendant had violated his contractual duty and had falsely represented that the part of the needle that had been broken off in the plaintiff's back had been removed. He claimed that he did not discover the falsity of the defendant's alleged misrepresentation until June 25, 1930. The defendant-physician, however, contended that the action, being an action based on malpractice, was an action in tort and was therefore barred by the statute of limitations. The trial court took this view of the case and dismissed the suit, and the plaintiff appealed to the Supreme Court of Idaho.

The complaint, said the Supreme Court, primarily alleges that the plaintiff and the defendant-physician entered into a contract for treatment. The defendant, however, did not expressly contract to use extraordinary skill and care, and only by implication agreed that he would use ordinary and reasonable care. That is only another way of saying that he contracted to discharge a duty imposed by law. Aside from the allegation of fraud on the part of the defendant, the basic allegations of the complaint are directed solely to carelessness, negligence and misconduct. The physician is not arraigned for a breach of his contract. He is arraigned for delinquencies in carrying that contract into execution. Those delinquencies, if they occurred, constitute nothing but malpractice, and the action is an action in tort, not an action for a breach of contract.

The plaintiff contended, however, that under the Idaho statutes (C. S. sec. 6611, subd. 4), a cause of action based on fraud does not accrue until the aggrieved party discovers the facts constituting the fraud and that he did not discover the alleged fraud in this case until June 25, 1930, less than two years before the action was begun. In order to invoke the statute cited by the plaintiff, said the Supreme Court, the action must rest solely on the fraud charged and the proof of that fraud must be essential to the granting of relief to the plaintiff. The statute with respect to the accrual of causes of action, relied on by the plaintiff, applies only to actions in which there is no injury except that arising out of the fraud itself. There was no merit in the plaintiff's contention that the alleged fraudulent concealment of the cause of action by the defendant stayed the running of the statute of limitations.

The action of the trial court in dismissing the suit was affirmed.

Medical Practice Acts: Discretion of Board in Granting Licenses by Reciprocity.—Ruffu, a graduate of a class C medical school, had been licensed to practice medicine in Illinois and sought a license by reciprocity in New Jersey. The New Jersey medical practice act authorizes the board of medical examiners, in its discretion, to issue a license without examination to a person who has been examined and licensed in another state, the standards of which when the applicant was licensed were substantially equal to those of New Jersey at that time. It was admitted that when Ruffu was licensed in Illinois the standards there were substantially equal to those then in force in New Jersey, but the New Jersey board nevertheless refused to grant him a license. Ruffu sought by mandamus to compel the board to do so. The only question to be determined, said the supreme court of New Jersey, is whether or not the board abused its discretion. Ruffu is a graduate of a class C medical school, a school not in good standing, in the opinion of the New Jersey board. He was therefore not eligible even for admission to an examination in New Jersey, for the medical practice act there requires every person admitted to examination to have the degree of doctor of medicine, conferred by a medical school which, in the opinion of the board, is in good standing when the degree is conferred. Under the circumstances, said the court, the board did not abuse its discretion in refusing to license Ruffu by reciprocity. His application for a writ of mandamus was rejected.—*Ruffu v. Board of Medical Examiners (N. J.)*, 163 A. 15.

Privileged Communications: Statement of Name of Attending Physician in Application for Insurance Not a Waiver.—A person who states in his application for insurance the name of a physician who treated him for a certain ailment does not thereby waive his right to have the information acquired by that physician in the course of attendance treated as a privileged communication. The privilege of secrecy may be claimed also by a beneficiary suing on the insurance policy.—*Novak v. Chicago Fraternal Life Ass'n (Kan.)*, 16 P. (2d) 507.

Evidence: Testimony of Expert Witness as Invasion of Province of the Jury.—An employee, who had broken his arm in the course of his employment, sued the defendant insurance company with which his employer carried indemnity insurance. The trial court refused to permit three medical experts, called by the insurance company, to state their opinions as to the extent to which the employee had lost the use of his hand. The proffered testimony, the trial court concluded, would be an invasion of the province of the jury. The insurance company appealed to the court of civil appeals of Texas, Amarillo. A medical expert, said the court of civil appeals, may not only give his diagnosis of the state of a person's health but also state his conclusion as to the cause of the injury or disease and make a prognosis concerning the physical condition. His opinion, when predicated on stated reasons, is admissible to show the extent of a personal injury. The object of all testimony is to prove the very fact to be found by the jury, and it is not usurpation of the powers of a jury to prove that fact. Since it was conceded that the physicians whose testimony was excluded by the trial court were qualified as experts and were in a position from observing and treating the employee to testify, it was error for the trial court to exclude their testimony.—*Zurich General Accident & Liability Inc. Co., Limited, v. Kerr (Texas)*, 54 S. W. (2d) 349.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

17: 589-872 (March) 1933

- Review of Recent Literature of Tar Cancer (1927-1931 Inclusive). M. G. Seelig and Zola K. Cooper, St. Louis.—p. 589.
Idiopathic Osteosarthritis. L. S. Goin, Los Angeles.—p. 668.
Multiple Myeloma: Report of Five Cases. E. Scott, F. M. Stanton and Mary Oliver, Columbus, Ohio.—p. 682.
Genetic Studies on Transplantation of Tumors: IV. Linkage in Tumor 19308 A. J. J. Bittner, Bar Harbor, Maine.—p. 699.
Id.: V. Tumor 19308 B. J. J. Bittner, Bar Harbor, Maine.—p. 709.
Id.: VI. Tumor 19308 C. J. J. Bittner, Bar Harbor, Maine.—p. 717.
Id.: VII. Comparative Study of Tumors 19308 A, B and C. J. J. Bittner, Bar Harbor, Maine.—p. 724.
Ambivalent Effect of Single Acute Trauma on Growth of Transplanted Mouse Tumors. M. C. Marsh, Buffalo.—p. 735.
Embryonal Nephroma in Sheep. W. H. Feldman, Rochester, Minn.—p. 743.
*Melanoma of Scalp: Report of Case and Review of Literature. Ida J. Mintzer, New York.—p. 748.
*Improved Technic for Massive Tissue Culture. G. O. Gey, Baltimore.—p. 752.
Calculation of Dosage from Intracavitary Radiation. M. C. Reinhard and H. L. Goltz, Buffalo.—p. 757.
Four Gram Pack. M. C. Reinhard, Buffalo.—p. 763.
Calculation of Dosage from Radon Seeds. M. C. Reinhard and H. L. Goltz, Buffalo.—p. 770.
*Technic for Intensive Roentgen Irradiation of Neck. B. P. Widmann and J. L. Weatherwax, Philadelphia.—p. 777.
Life Size Outlines for Gynecologic Cancer Case Records. R. L. Dickinson, New York.—p. 784.

Melanoma of Scalp.—Mintzer reports a fatal case of melanoma of the scalp which illustrates how a benign pigmented mole that has been subjected to repeated trauma or chronic irritation may become transformed into a malignant melanoma. The lesion diagnosed clinically as "sebaceous cyst" and removed in 1928 was a fully developed melanoma, and the failure on the part of the surgeon to have the specimen examined is inexcusable. Recurrence was noted six months later, and death ensued a year after the recurrence had appeared. The first lesion was apparently localized, and the dissemination followed the second operation in spite of the roentgen treatment. In all probability, at the time roentgen therapy was given to the metastases in the cervical glands, there were metastases in the retroperitoneal glands and in the liver.

Technic for Massive Tissue Culture.—Gey outlines a method for massive tissue culture which consists in the utilization of the entire inner surface of the culture tube for the growth of the tissue cells implanted in it. In addition, it is possible to bring about a sort of washing action on the growing tissue cells by revolving the tube slowly at a controlled speed, thus allowing the supernatant fluid to bathe them constantly. The revolving action of the tube is brought about by a special device. The necessary slow movement has been found in preliminary experiments to be from one-half to one hour for each turn, or just enough to prevent a violent action of the supernatant fluid which would wash the growing cells free from the inner wall of the tube. By a simple adjusting mechanism the necessary slow movement can be varied and regulated to any desired speed. The method permits the maintenance of permanent strains of many types of cells in laboratories when sufficient technical help is not available to maintain the large numbers of cultures necessary when other methods of tissue culture now in use are employed. It eliminates to a great extent the cumbersome and detailed transfer technic involved when the cover slip method is used. As the entire medium is available for the growth of the cells contained in it, this simple roller tube method is economical, and the amount of medium used becomes almost directly proportional to the amount needed for the cultures it contains.

Technic for Irradiation of Neck.—The method of Widmann and Weatherwax for obtaining the sum total skin intensity resulting from the four direct beams, as well as the overlapping and transmitted radiation, is as follows: An anatomic cross section is drawn at the level of the desired central point of irradiation and enlarged according to the exact measurements of the patient to be treated; an isodose chart is applied to each of four portals anterior, posterior, right and left lateral. The depth of the dose to any part of the neck from all four fields can readily be ascertained. The isodose charts from four fields at right angles to one another will show that the total skin intensity is practically the same as the depth intensity and represents a homogeneous distribution of the radiation throughout the irradiated area. By clinical observation on a series of forty-seven cases, the authors found that the maximum safe dose which can be administered, within a period of eight or ten days, is 225 per cent skin erythema dose or 1,800 roentgens (as measured in air) to every part of the skin surface of the neck. Each skin intensity represents 100 per cent direct radiation.

American Journal of Surgery, New York

19: 411-602 (March) 1933

- *Use of Sclerosing Solutions in Treatment of Cysts and Fistulas. E. C. Cutler and R. Zollinger, Boston.—p. 411.
Thrombo-Angiitis Obliterans: Consideration of Disease and Its Management. H. R. Mahorner, New Orleans.—p. 419.
Study of Thymophysin in First Stage of Labor: Observations on Its Effect on Blood Pressure. M. G. DerBrucke, Brooklyn.—p. 429.
Pelvimetry: Some General Considerations. H. Thoms, New Haven, Conn.—p. 435.
*Appendicitis in Pregnancy. W. B. Marbury, Washington, D. C.—p. 437.
Myosarcoma of the Stomach: Report of Case. C. R. Edwards and R. B. Wright, Baltimore.—p. 442.
Comparison of the Anatomic, Clinically Normal and Pathologic Stomach. A. G. Brenizer, Charlotte, N. C.—p. 446.
Removal of Open Safety Pin from Duodenum. J. T. Wallace, New York.—p. 453.
Gallstone Intestinal Obstruction. H. D. Junkin, Paris, Ill.—p. 456.
Acute Intestinal Obstruction Due to Gallstones. I. J. Vidgoff, Los Angeles.—p. 458.
Review of Recent Advances in the Knowledge of the Pathology of the Liver and Their Clinical Application. F. C. Helwig, Kansas City, Mo.—p. 462.
Incomplete Intestinal Rotation. B. Newburger, Cincinnati.—p. 474.
*Adiposis Dolorosa. C. L. Wilson, Boston.—p. 485.
*Surgical Method for Relief of Pain. V. I. Razumovsky, Beshtau, Essentuki, Russia.—p. 489.
Practical Application of Microphone in Teaching of Surgery. R. C. Chaffin, Los Angeles.—p. 491.
Restoration of Function of Hand and Arm, Following Radical Amputation of Breast. C. G. Roberts, Chicago.—p. 494.
Medicolegal Importance of the Physician's and Hospital Records. S. A. Lewis, Hollywood, Calif.—p. 497.
Dermoid Cyst of Ovary, Perforating into Urinary Bladder with Profuse Hematuria. G. H. Ewell, Madison, Wis.—p. 502.
Suprapubic Cystostomy and Prevention of Pelvic Cellulitis. L. T. Mann, New York.—p. 505.
Technic of Bartholin Cyst Excision Following Paraffin Injection. L. S. Auster, New York.—p. 509.
*Use of Bacterial Filtrates (Antivirus) in Genito-Urinary Infection. L. Nerb, Brooklyn.—p. 511.
Problems of Prostatism: Suggested by a Study of One Hundred Recent Cases. N. P. Rathbun, Brooklyn.—p. 515.
Perirenal Hydronephrosis: Case Report in Infant of Seven Months. M. F. Campbell, New York.—p. 523.
Foreign Body (Chewing Gum) in Urinary Bladder: Report of Two Cases. R. D. Gill, Wheeling, W. Va.—p. 528.
Fibroma of Kidney: Report of Case. L. V. Rush and H. L. Rush, Meridian, Miss.—p. 531.
Résumé of Spinal Anesthesia. W. N. Kemp, Vancouver, B. C., Canada.—p. 534.
Ox Fascia (Dead Fascia) Graft. S. T. Glasser, New York.—p. 542.
Hoffa's Disease and External Cartilage Injury in Same Knee. H. E. Hipps, Marlin, Texas.—p. 545.
The Cripple, Often a Needless Liability. W. Truslow, Brooklyn.—p. 549.

Sclerosing Solutions in Cysts and Fistulas.—Cutler and Zollinger report cases of gliomatous cysts (astrocytomatous type), cervical fistulas and pilonidal sinuses in which they used a solution consisting of 6 cc. of absolute alcohol, 3 cc. of chloroform, 1 cc. of glacial acetic acid and 1 Gm. of ferric chloride, as a sclerosing agent. The application of the solution has either greatly assisted in making an operation more complete, in the cases of gliomatous cysts, or it has been able to cure the condition without radical surgery, in cases of cervical fistulas and pilonidal sinuses. The authors state that the successful use of a chemical substance without risk to the patient and without the disfigurement of a scar suggests that this method should have much wider application. It is of course in the field of small

fistulas with a lining membrane not more than a few cells deep that this method will find its greatest usefulness. They themselves were surprised at the success obtained in cases of pilonidal sinus. After opening the pilonidal sinus widely, thus allowing the fixative to reach and destroy all the epithelial surfaces, the destroyed lining of the cyst wall was curetted away. Since the patient can be ambulatory during the treatment and since excellent results have been obtained in their cases, they believe it worth while to attempt this method in most of the cases seen, for radical surgery can always be resorted to later. Their experiments in neurologic surgery have shown that the solution penetrates more quickly, produces less underlying encephalitis, makes thin cyst linings tougher and more easily handled, and is a better hemostatic agent.

Appendicitis in Pregnancy.—Marbury believes that every obstetric patient should be questioned concerning abdominal discomfort, with especial reference to the appendix. In doubtful chronic cases a barium meal followed by roentgenoscopy is helpful. In nonsuppurative cases during the first six months the outlook for both mother and child is excellent. Later the mortality increases directly as the duration in months of the pregnancy and the duration in hours of the appendicitis. Pregnancy is not an etiologic factor in primary appendicitis but tends to cause recurrences in which a pathologic condition already exists. Motion of the infant and the sag of the pendulous uterus are definite obstacles to the formation of adhesions and partially account for the frequency of generalized peritonitis. Early operation is the greatest factor in lowering mortality. Too much dependence should not be placed on a moderate temperature and leukocyte count, as these may give a false sense of security. A careful history, especially with reference to previous attacks, is of inestimable aid. The direct approach through a muscle splitting incision is advocated in nonsuppurative cases. In the presence of generalized peritonitis a cesarean section should be done, followed by the removal of the uterus, as in the Porro operation.

Adiposis Dolorosa.—Wilson points out that the fact that there have been no consistent observations in all the cases reported shows that adiposis dolorosa is not a clinical entity. It seems more reasonable to assume that the condition is one of either simple obesity or lipomatosis associated with neurosis or neurasthenia, and that the pathologic conditions found in cases that have come to necropsy were incidental. Whether obesity is to be explained on the basis of energy intake alone or energy intake and endocrine gland disturbances is not entirely settled. The preponderance of evidence points toward the latter. This is borne out by adiposis cerebri (Frohlich's syndrome), which is a disease of obesity associated with consistent pathologic changes in the pituitary gland. On the other hand, improvement in cases of adiposis dolorosa has been observed when the diet alone has been reduced. It is well, therefore, to look on adiposis dolorosa as a syndrome of lipomatosis or generalized or localized obesity associated with neurasthenia or neurosis. The treatment is symptomatic. The author reports a case.

Surgical Method for Relief of Pain.—Physiologic and clinical data convince Razumovsky that one can eliminate pain in neuralgia not only by means of dissection of sensory nerves but also by other means, such as various effects on the sensory receptors in neuralgia of peripheral origin, which apparently predominates, and on the pain conductors and the ganglion centers. He has previously reported his method of alcoholization for the treatment of neuralgia of the trigeminus; namely, the irrigation of the common carotid artery and its bifurcations, i. e., the beginning of the external and the internal carotid, aiming to affect the nerves in this artery and around it which reach the peripheral ramifications, the capillaries, and perhaps also the receptors. He has cured numerous cases of neuralgia by alcoholization, some cases having been observed during a period of two years. He has also observed some relapses and therefore he urges that the irrigation include the portion of bifurcation. He has also had good results in treating angiosclerotic gangrene, ischias, gastralgia, hepatalgia, neuralgia and painful tumors. The author believes that alcoholization will replace many serious operations, such as radicotomy, ramisection and chordotomy.

Bacterial Filtrates.—Nerb states that, in the intradermal injection of bacterial filtrates in genito-urinary infections, it is essential to have a 1 cc. syringe graduated in twentieths of a cubic centimeter, using either a Luer or tuberculin syringe and a three-fourths inch, 25 gage needle. The upper arm is usually chosen for the injection except in women, in whom it is given in the thigh. The injection is made by holding the needle parallel to the skin surface. With the oval point visible, it is inserted slowly into the papillary layer and the solution is slowly injected. If the injection is given correctly, a nontranslucent white wheal is produced, circumscribed, with a pinkish border. It is the author's practice to start with a small dosage, that is, 0.1 cc., and to increase it 0.1 cc. each time, until 1 cc. is given. It is better to give the injection every forty-eight hours and to keep the dosage smaller, not exceeding 0.5 cc. if a large local reaction occurs. Smaller doses may be given or the filtrate diluted twenty times. Besredka's bacterial filtrates, even if not specific, will increase natural resistance by stimulating the reticulo-endothelial system. It is essential, if stock filtrates are given, to define accurately the specific strain of the organism causing the infection. Bacterial filtrates have proved of value in gastro-enterology and in the treatment of infectious arthritis. Using freshly killed organisms and the bacterial filtrate as a diluent should prove of more value in intradermal treatment, since the soluble toxins are incorporated with the bacterial protein.

American Review of Tuberculosis, New York

27: 217-314 (March) 1933

- Alcohol and Tuberculosis. L. Brown and J. T. Eagan, Saranac Lake, N. Y.—p. 217.
- *Change of Climate and Altitude: I. Its Effects on Tuberculosis Patients. E. W. Phillips, Phoenix, Ariz.—p. 247.
- Comparison of Certain Media for Cultivation of Tubercle Bacilli from Sputum. M. F. Shaffer, Oxford, England.—p. 259.
- Comparison of Tissue Reactions to Pulmonary Infection with Tubercle Bacilli in Animals of Varying Resistance. A. J. Vorwald, Chicago.—p. 270.
- Sensitization of Guinea-Pigs and Production of Allergy and Anaphylaxis to Tuberculo-protein. H. S. Reichle and H. Goldblatt, Cleveland.—p. 291.
- *Tape Test with Tuberculin Ointment. E. Wolff, with the assistance of M. H. Teitler, San Francisco.—p. 308.
- Method of Recording Roentgen-Ray Readings. H. B. Pirkle, Rockville, Ind.—p. 311.

Climate and Altitude in Tuberculosis.—Phillips reviews the records of 309 patients with pulmonary tuberculosis, who during the winter resided in a sanatorium near Phoenix, Ariz., at an altitude of 1,079 feet, and during the summer months at an altitude of 5,300 feet, returning to Phoenix in October, in order to determine the effect of such a climatic change. Two thirds of the patients were classed as far advanced. Only the known hyperthyroid and those whose apneic pause was markedly shortened were denied treatment in the higher altitude. The seasonal cycle in which these patients lived was marked by reduplications of early summer and late summer, with dry air, abundant sunshine and comfortable outdoor temperatures throughout the year. The body weight curves of these patients showed a definite seasonal trend, apparently related to the length of the days and the intensity of solar radiation. They lost weight from April to July and gained during the other months. Body weight in this group was not governed by air temperature, relative humidity or percentage of possible sunshine, nor was it affected by the change of altitude in either direction. Women gained proportionately less weight than men and exhibited a wider seasonal variation in their weight. More than one third of the men and women alike, when moved from a low to a high altitude, showed a moderate acceleration of the pulse rate. This faster pulse was not accompanied by any increase in the clinical activity of their disease. The body temperatures of these patients, whether febrile or normal, were not affected by the change of climate and altitude. The incidence of pulmonary hemorrhage was almost exactly the same in the higher altitude as in the lower. A tendency to hemoptysis was not found to contraindicate the change, though all patients so transferred were kept unusually quiet during the period of adjustment.

Tape Test with Tuberculin Ointment.—Wolff outlines the technic for application and reading of a tuberculin-ointment tape test. The ointment is easier to apply and causes less psychic disturbance and fewer untoward reactions than does

old tuberculin in the intracutaneous method of testing. The agreement between the ointment test and the intracutaneous test in all dilutions, as applied to 190 children, was 95.8 per cent. The ointment test is generally comparable in results with the intracutaneous old tuberculin test in a dilution of 1:100. The technic is as follows: The area of application is the paravertebral region between the eighth and eleventh thoracic vertebrae. The skin is cleansed with green soap and water, dried, bathed with benzene and then dried again. A pea-sized drop of the semiliquid tuberculin ointment is applied on the right side, and a similar drop of the control ointment on the left side. Each of these drops is covered with a two-inch square of adhesive tape. The test is read in forty-eight hours. The adhesive tape is removed after soaking with benzene and the area is gently cleansed with benzene. Ten minutes after removal, the reaction may be clearly observed. A positive reaction exhibits papules, erythema, induration and pigmentation.

Annals of Surgery, Philadelphia

97: 321-480 (March) 1933

- *Dead Bone Grafts to Repair Skull Defects. B. E. Pankratiev, Kazan, Russia.—p. 321.
- Studies on Acute Cranial and Intracranial Injuries. E. S. Gurdjian, Detroit.—p. 327.
- Chemical Treatment of Periosteum in Thoracoplasty to Inhibit Rib Regeneration. C. M. Van Allen, Peiping, China.—p. 368.
- *Longitudinal Bone Growth: Influence of Sympathetic Deinnervation. J. D. Bisgard, Chicago.—p. 374.
- Intercapulothoracic Amputation for Secondarily Infected Tuberculosis of Shoulder. H. Milch, New York.—p. 381.
- Recurring External Dislocations of Patella. B. F. Buzby, Camden, N. J.—p. 387.
- *Treatment of Malunion Following Unreduced Pott's Fracture. L. C. Wagner, New York.—p. 394.
- Subcutaneous Angiomas of Breast. J. G. Menville and J. C. Bloodgood, Baltimore.—p. 401.
- Effect of Blood in Experimental Peritonitis. L. Rademaker, Philadelphia.—p. 414.
- *Traumatic Ulnar Neuritis, with Especial Reference to Late or Tardy Ulnar Paralysis. F. M. Conway, New York.—p. 425.
- *Treatment of Sarcoma of Long Bones. W. B. Coley, New York.—p. 434.

Dead Bone Grafts to Repair Skull Defects.—Pankratiev presents four case histories of skull repair by means of dead human bones, in one of which cranioplasty was performed because of a recent complicated skull fracture, with both an immediate and a final good result. In the second case, cranioplasty was used to cover an old defect causing traumatic epilepsy, and a disfiguring scar on the forehead. The result six months after the operation showed permanent improvement. In the third case, dead human bone was used because of an enormous skull defect 15 by 10 cm. in size, after the extraction of an osteosarcoma of the skull case. The operation proceeded smoothly, offering no difficulties, but the patient's unexpected inability to withstand the anesthetic prevents the author from reporting a case which he believes would have shown an excellent surgical result. In the fourth case, a congenital defect of a child's skull and cerebral hernia were successfully treated. The author concludes that the method is applicable both to fresh, noninfected wounds and to old bone defects with scar tissue. In the event that infection is anticipated, the application of cranioplasty seems inexpedient. The later suppuration of the wound would probably necessitate the extraction of the transplant, preventing a favorable result. Such defects as those formed after the extraction of bone skull tumors and in congenital cerebral hernia may be considered amenable to cranioplasty. In order to prevent the possibility of postoperative meningitis as well as acute purulent encephalitis, bone transplants of exact size and shape should be used and fastened with wire sutures.

Longitudinal Bone Growth.—Bisgard points out that, in normal experimental animals, longitudinal bone growth is not influenced by sympathetic deinnervation. Retarded bone growth in a monkey with residual paralysis from anterior poliomyelitis was not accelerated by sympathetic deinnervation. There is no experimental evidence to justify the use of the operation of sympathetic ganglionectomy for the purpose of accelerating bone growth. The three tried and proved methods of correction of length discrepancies of the extremities are shortening of the long extremity by osteotomy, longitudinal growth arrestment of the long extremity and lengthening of the short extremity by distraction.

Treatment of Malunion After Pott's Fracture.—Wagner states that correct alinement of all joint fractures should always be eagerly sought for and one should have no hesitancy in proceeding with open reduction in all fractures about the joints, if proper position cannot be secured by closed methods. The author has developed a type of open operative treatment for cases of malunion following unreduced Pott's fracture which corrects the vertical and transverse alinement of the ankle joint proper and which tends to throw the weight bearing in its proper normal line. The leg is prepared in the usual manner and a tourniquet is applied. The skin and subcutaneous tissues about the internal malleolus are divided and the lower end of the tibia is exposed. A similar incision is made over the external malleolus, but it is not necessary to expose the lower end of the fibula. The old fracture line of the deformed internal malleolus is removed with a chisel, a wedge of bone being taken out. A linear osteotomy of the lower end of the fibula is performed and the foot is placed in marked inversion, until the vertical and transverse alinement of the ankle joint is secured. The wedge of bone is reshaped and placed between the separated ends of the fibula and should hold the foot in its newly assumed corrected attitude. A plaster dressing is applied with the foot in marked inversion and should extend from the toes to the knee. At the end of six weeks from the date of operation, another cast is applied with the foot in slight inversion and the patient is encouraged to bear weight. Ten weeks from the operation, a caliper brace to fit in the shoe and extend to the knee is applied. Walking is encouraged in the corrected attitude. All support can be usually discarded about seven months after the operation, when all signs of traumatic arthritis of the ankle joint have disappeared.

Traumatic Ulnar Neuritis.—Conway believes that the lesions in which a disturbance of the normal relation between the ulnar nerve and its nerve bed exists may be grouped under the general heading of "traumatic neuritis." The clinical entity of late ulnar palsy is then to be regarded as being within this group. The condition is not common but is easily diagnosed in the light of a history of an old fracture about the elbow, followed years later by increasing weakness and atrophy of the hand. The original fracture is almost invariably a fracture of the external condyle of the humerus sustained during childhood. Of all the methods of surgical intervention, that of transplanting the ulnar nerve is by far the simplest and has given the most striking results. The author reports a case of ulnar neuritis in which the original fracture occurred twenty years before the development of symptoms and in which definite objective and subjective improvement was manifest as early as two weeks following the anterior transplantation.

Treatment of Sarcoma of Long Bones.—For osteogenic sarcoma, especially the type associated with marked new bone formation, Coley advises immediate amputation as soon as the diagnosis has been established. In order to lessen the chances of a recurrence, Coley's toxins should be given as a prophylactic for a period of six months. While endothelial myeloma is highly sensitive to both toxins and irradiation, rarely has the disease been controlled by irradiation alone. Toxins alone or toxins combined with irradiation have resulted in a large number of five-year recoveries, in some instances after the disease had reached the inoperable stage and metastases had developed. The author believes that a combination of the systemic effect of Coley's toxins and the local effect of irradiation offers the greatest hope of saving the patient's life as well as his limb in this type of tumor. Early amputation followed by prolonged toxin treatment would undoubtedly give a higher percentage of five-year recoveries, and for this reason it is well to let the patient have a voice in the final decision as to the method to be employed. In treating giant cell tumors of the long bones he advises early and thorough curettage, swabbing out the cavity with a 50 per cent solution of zinc chloride or phenol and alcohol, closing the wound without drainage, and then on the third or fourth postoperative day starting a short course (four weeks) of prophylactic toxin treatment to be given in moderate doses. Primary amputation or resection should almost never be performed in this type of tumor. His series contains many cases in which large areas of bone destruction were completely restored by nature, showing that resection and bone grafting are unnecessary. He reports a series of 360 cases, which includes

a large number of inoperable, hopeless cases in which recovery occurred under treatment and the patients have remained well for more than five years, and nineteen permanent recoveries that took place prior to 1913.

Archives of Dermatology and Syphilology, Chicago

27: 373-548 (March) 1933

- *Treatment of Epithelioma of the Lip by the Dermatologist. J. A. Elliott, Charlotte, N. C.—p. 373.
- Cholesterol and Lecithin Studies in Syphilis: Cholesterol Partition in Relation to Wassermann Reaction. I. Rosen, Frances Krasnow and M. A. Lyons, New York.—p. 383.
- Cutis Verticis Gyrate: Report of Case. E. K. Stratton, San Francisco.—p. 392.
- *Sodium Dehydrocholate in Arsphenamine Poisoning: Preliminary Report. B. Appel, Boston.—p. 401.
- Hypersensitivity to Mercurochrome Shown by Patch Test. Frances Pascher and Mabel G. Silverberg, New York.—p. 408.
- Keratosis Blennorrhagica. S. O. Chambers and G. F. Koetter, Los Angeles.—p. 411.
- Multiple Fibromas: Recklinghausen's Disease. J. T. Wayson, Honolulu, Hawaii.—p. 421.
- *Pseudoxanthoma Elasticum: Report of Five Cases Illustrating Its Association with Angioid Streaks of the Retina. J. W. Jones, H. S. Alden and E. L. Bishop, Atlanta, Ga.—p. 424.
- Relapsing Febrile Nonsuppurative Panniculitis (Weber). H. E. Alderson and S. C. Way, San Francisco.—p. 440.
- Leprosy Proteus. J. G. Uruñia, Mexico City, Mexico.—p. 450.
- LXIII. Pyoderma Gangrenosum: Report of Case. C. W. Lane and C. M. Stroud, St. Louis.—p. 460.
- *Bacteriologic Studies on Lichen Planus: Preliminary Report. F. M. Jacob and T. R. Helmbold, Pittsburgh.—p. 472.
- Nevo-Epithelioma Adenoides (Cylindroma) of the Scalp. A. W. Stillians, Chicago.—p. 481.
- Creeping Eruption Due to Ancylostoma Braziliense. L. McCarthy, Washington, D. C.—p. 490.
- The Senear-Usher Syndrome: Variety of Lupus Erythematosus. L. Taussig, San Francisco.—p. 498.

Treatment of Epithelioma of the Lip.—Elliott treated sixty-six cases of primary epithelioma of the lip by electrocoagulation and irradiation. In none of the cases has there been a local recurrence or metastasis to the lymph nodes. In one case a possible metastasis to the brain developed seven years following the removal of the lesions on the lip. Electrocoagulation and irradiation offer a high percentage of cures in early epithelioma of the lip. The end-results are as good as, if not better than, those obtained by any other method of treatment. The dermatologist by virtue of his diagnostic ability is in a preferred position to treat such lesions.

Sodium Dehydrocholate in Arsphenamine Poisoning.—Appel states that sodium dehydrocholate is a choleric drug, nontoxic in 10 cc. doses of a 5 per cent solution administered intravenously at intervals of several days. It has been used to combat the toxic action of arsphenamine and its derivatives on the liver. In five cases of jaundice which developed during antisyphilitic treatment with neoarsphenamine, the patients were treated with intravenous injections of sodium dehydrocholate. There was a prompt fall of the icteric index, with rapid recovery. The author suggests that the effect may be caused by the washing of arsenic from the liver, as the result of increased cholestasis. In a number of cases in which nausea and vomiting followed intravenous injections of neoarsphenamine, the patients were treated by mixing the solution of the drug with a solution of sodium dehydrocholate and injecting the mixture intravenously. The majority of the patients showed no reactions following these injections. One case is reported in detail.

Pseudoxanthoma.—Jones and his associates discuss the previously reported cases of pseudoxanthoma elasticum of the skin and point out the observations of others relating to the peculiar association of this condition with angioid streaks of the retina. Five of their cases are reported, all of which showed angioid streaks of the retina. The histopathologic pictures of the excised skin of pseudoxanthoma elasticum, senile elastosis and lineae albicantes are presented with observations on the similarity of the appearance of these conditions in all instances. The authors conclude that the association of angioid streaks of the retina and pseudoxanthoma elasticum is a frequent occurrence, that the pathologic appearance of the latter aids in a theoretical explanation of the former, and that pseudoxanthoma elasticum is a disease allied to the process that produces elastic tissue degeneration in some scars and in senility. They have found nothing in their studies to indicate that this condition is in any sense neoplastic. While there is an overgrowth of elastic

fibers as well as degeneration, microscopic studies fail to show any neoplastic characters, and the clinical features of the cases seem to bear this out.

Lichen Planus.—Jacob and Helmbold isolated a gram-negative, anaerobic bacillus from twenty-five of twenty-eight cases of lichen planus. Semisolid dextrose serum agar containing cubes of human tissue was the medium used. The serum used must be inactivated at from 56 to 60 C. for a number of hours. The organism was not found in normal skin or in a number of cases of other papular diseases used as controls. Inoculation of human skin with this organism, in a few instances, produced lesions which both clinically and histologically resembled lichen planus. The organism could be easily demonstrated in section in the exudate of lichen planus lesions incubated for forty-eight hours or more.

Archives of Neurology and Psychiatry, Chicago

29: 433-682 (March) 1933

- *Meningococcic Meningitis and Epidemic Meningo-Encephalopathy: Reports of One Hundred and Twenty-Two Additional Cases in the Indianapolis Epidemic and of Sixty-Eight Cases of an Epidemic Meningo-Encephalopathy. G. F. Kempf, L. H. Gilman and L. G. Zerfas, with technical assistance of Mrs. M. J. Joiner, Indianapolis.—p. 433.
- Influence of Variations in Fluid Intake on Intracranial Pressure in "Epileptics." F. Fremont-Smith and H. H. Merritt, Boston.—p. 454.
- Acalculia (Henschen): Clinical Study. H. D. Singer and A. A. Low, Chicago.—p. 467.
- Abolition of Bulbocapnine Catatonia by Cocaine. Ethel Friedman Buchman and C. P. Richter, Baltimore.—p. 499.
- *Treatment of Athetosis and Dystonia by Section of Extrapyramidal Motor Tracts. T. J. Putnam, Boston.—p. 504.
- *Ménière's Disease: Diagnosis and Treatment. C. C. Coleman and J. G. Lyerly, Richmond, Va.—p. 522.
- Stenosis of Aqueduct of Sylvius. H. L. Parker and J. W. Kernohan, Rochester, Minn.—p. 538.
- *Hour-Glass Tumors of Spine. H. C. Naffziger and H. A. Brown, San Francisco.—p. 561.
- Concomitant Dissimilar Diseases of Nervous System. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 585.
- Myelitic and Myelopathic Lesions (Clinicopathologic Study): II. Toxic Myelopathy. C. Davison and M. Keschner, New York.—p. 600.

Meningococcic Meningitis and Meningo-Encephalopathy.—Kempf and his associates present sixty-eight cases that do not conform to any of the described clinical entities as an acute epidemic meningo-encephalopathy in which there is a macrophagic and leukocytic response. Of the sixty-eight cases, twelve were fulminating, thirty-five less acute, and twenty-one mild. Patients in the fulminating group continued in convulsions, became comatose and died from twelve to forty-eight hours after the onset. Occasionally a patient improved after spinal drainage and the intravenous administration of dextrose. The temperature in most of these patients rose rapidly to as high as 108 F. or dropped below normal—in one instance going as low as 94.5 F. In the less severe type the patients improved rapidly after spinal drainage and frequently came out of stupor or coma after one or two punctures. In these patients the temperature, if elevated, rapidly approached normal after one or more spinal drainages. The course then showed little fever and few symptoms unless drainage was stopped. Even when the spinal fluid pressure was normal or low, drainage relieved the severe headaches from which the patients suffered. Most of the patients with the mild type of infection improved remarkably after daily spinal drainage. Several psychopathic patients contracted the disease through contact with other patients in whom it had been unrecognized; in them the mental symptoms did not improve. The mortality rate for the first sixty-eight cases was 39.7 per cent; it has since continued below 40 per cent.

Treatment of Athetosis and Dystonia.—Putnam brought about a decrease in the abnormal movements by operative section of the prepyramidal and anterior quadrant marginal fibers, or the latter alone, of the cervical cord in two cases of familial dystonia musculorum, one of bilateral choreo-athetosis following an acute infectious disease in infancy and one of unilateral athetosis following an acute infection in adult life. The operation was followed by mild signs of pyramidal tract defect in one case and hemianalgesia in another. There were no permanent ill effects from the operation and (except in one case) no sensory loss. In a case of juvenile paralysis agitans following encephalitis, the symptoms were neither relieved nor aggravated by the operation.

Ménière's Disease.—During the past two years, Coleman and Lyerly divided the eighth cranial nerve in eleven patients for the relief of Ménière's disease. The diagnosis is based on a history of attacks of violent vertigo accompanied by nausea and vomiting, tinnitus in one ear and partial deafness in the same ear. The operation for relief of Ménière's disease presents no great difficulties to those experienced in neurologic surgery. A curved incision is made over the suboccipital region on the affected side from a point on a level with the tip of the mastoid process and running upward, then inward and downward to the midline. It is important to place the bony opening laterally as far as possible without entering the mastoid cells, because the most direct approach to the cerebellopontile angle is along a line parallel to the posterior surface of the pyramid. Every effort should be made to avoid hemorrhage about the nerve. The arachnoid covering should be carefully removed before an effort is made to separate the eighth nerve from the facial nerve. If a hemorrhage about the nerve occurs on division of the eighth nerve, facial paralysis is likely to result. The exposure of the nerve should be adequate. Forceful retraction should be avoided if the facial nerve is to be protected from damage. The auditory nerve is first examined for abnormalities and is then hooked up and divided with a long, sharp-pointed knife. No attack of vertigo has followed the operation in any case, although some of the patients have had a slight unsteadiness, particularly on sudden change of position or quick movements. This unsteadiness tends to improve with time and is not disabling. Tinnitus, when not entirely abolished by the operation, has been changed and improved in every case. The authors conclude that intracranial section of the eighth nerve is highly successful in relieving the disability of Ménière's disease.

Hour-Glass Tumors of Spine.—Naffziger and Brown state that hour-glass tumors of the spine occur with far greater frequency than is indicated by the literature on the subject. They are so common that, in making a diagnosis of compression of the cord from tumor, the possibility of the tumor being of hour-glass type should be kept in mind. In the neck, careful palpation may reveal an extravertebral mass. In the dorsal and lumbar regions, as well as in the cervical region, diagnosis is aided by roentgenograms, which should include views of the intervertebral foramina and the interlaminar and interspinous spaces. Deformity of these is suggestive. The majority of hour-glass tumors are encapsulated. In some instances, complete removal of the intraspinal and extraspinal portions at one stage may be possible; in others, second-stage operations for the removal of the extraspinal portions may be required. Thoracic tumors have been removed, only to be followed by hydrothorax resulting from clear cerebrospinal fluid because the tumor was not recognized as being of the hour-glass variety and the dura was torn. The authors add fifteen cases to the sixty-eight that they reported previously.

Canadian Public Health Journal, Toronto

24: 105-154 (March) 1933

- Vancouver Outbreak of Hemorrhagic Smallpox: I. Epidemiologic Study of Outbreak. J. W. McIntosh, Vancouver, B. C.—p. 105.
Id.: II. Lessons Learned from the Outbreak. J. W. McIntosh, Vancouver, B. C.—p. 112.
Id.: III. Clinical Notes. E. D. Carder, Vancouver, B. C.—p. 120.
Operation of Swimming Pools. R. F. Heath, Toronto.—p. 123.
Tularemia in Ontario: Report of Five Cases. E. P. Johns, London, Ont.—p. 128.
Final Report of Committee on Definition of Stillbirths. E. Gagnon, Montreal.—p. 133.
Laboratory History of Diphtheria in Hamilton. W. J. Deadman and F. J. Elliott, Hamilton, Ont.—p. 137.

Georgia Medical Association Journal, Atlanta

22: 83-122 (March) 1933

- Clinical Significance of Classification of Gliomas. E. F. Fincher, Jr., Atlanta.—p. 83.
Observations of Some Common Breast Lesions. W. P. Nicolson, Jr., Atlanta.—p. 90.
Ameloblastoma: Prevalence and Protean Manifestations. S. F. Rosen, Savannah, and D. R. Thomas, Jr., Augusta.—p. 94.
Suture of Brachial Artery: Report of Case. E. Callaway, LaGrange.—p. 98.
Treatment of Abortions. P. R. Stewart, Monroe.—p. 100.
Maternal Mortality in Georgia. S. S. Smith, Athens.—p. 103.
Birth Control. S. R. Mitchell, Pineview.—p. 105.
Arachnoidism: Case Report. W. A. Walker, Cairo.—p. 105.

Johns Hopkins Hospital Bulletin, Baltimore

52: 173-254 (March) 1933

- Crystalline Insulin in Treatment of Diabetes Mellitus. J. E. Howard and Agnes de Lawder, Baltimore.—p. 173.
*Experiments Demonstrating That Acquired Immunity in Syphilis Is Not Dependent on Allergic Inflammation. A. R. Rich, A. M. Chesney and T. B. Turner, Baltimore.—p. 179.
Mechanism Responsible for Prevention of Spread of Bacteria in Immune Body. A. R. Rich, Baltimore.—p. 203.
*Auricular Flutter with 1:1 Response. Caroline C. Bedell, Baltimore.—p. 225.

Acquired Immunity in Syphilis.—The rabbits that Rich and his associates rendered immune to syphilis by inoculation with *Spirochaeta pallida* showed no allergic reaction whatever, whether macroscopically or microscopically, on intracutaneous reinoculation at periods ranging from 28 to 482 days after the primary, immunizing infection. On the contrary, the most striking phenomenon observed in the immune animals, as contrasted with the nonimmune controls, was always a remarkable indifference of the tissues of the former to the presence of the injected virus. Although allergy to *Spirochaeta pallida* is well known to appear during human syphilitic infection and can also be induced in the rabbit, according to Noguchi, the present experiments demonstrate that allergic inflammation is not necessary for the operation of acquired immunity in syphilis.

Auricular Flutter.—Bedell describes paroxysmal attacks of 1:1 response occurring during the course of auricular flutter in twenty-four cases. Three of these cases are reported for the first time, with electrocardiograms and tabulated analysis of the records obtained; the remaining twenty-one cases have been gathered from the literature. The twenty-four cases have been subdivided into three groups in which the mechanism seems somewhat different: 1. Two cases characterized by rapidly increasing auricular tachycardia in which 2:1 block appears shortly after a rate of from 240 to 273 is reached. 2. Four cases resembling paroxysmal auricular tachycardia, but with heart rates ranging from 212 to 244. There is no definite evidence that these are instances of auricular flutter. 3. Eighteen cases, forming a unified group, from which the characteristics of 1:1 flutter were adduced. The author observed that a 1:1 flutter occurs most frequently in the fifth decade of life; it has not been observed above the age of 57, in contrast to other forms of auricular flutter, which may occur after the age of 70. In other respects, the etiology is not dissimilar. The 1:1 paroxysms occur during the course of established auricular flutter in which a high grade of block is not established, often with increasing ease and frequency. The attack begins abruptly following exertion. Extreme weakness, shortness of breath and palpitation are the usual manifestations. Syncope, precordial pain and congestive failure may occur. After minutes or hours, the attack subsides gradually. Attacks have followed the administration of quinidine, as well as the combination of atropine and tribrom-ethanol. The attacks of syncope and the possibility of congestive failure during frequent paroxysms somewhat modify the general prognosis in flutter. Digitalis effectively prevents 1:1 paroxysms by increasing the auriculoventricular block. During quinidine administration the patient should be kept in bed because of the possibility of paroxysms.

Journal of Allergy, St. Louis

4: 163-238 (March) 1933

- Treatment of Hay Fever with Standardized Pollen Extracts Based on New Unit of Protein Nitrogen. R. A. Cooke, A. Vander Veer and J. H. Barnard, New York.—p. 163.
Treatment of Hay Fever by Specialists in the United States and Canada: Report of Inquiry. H. L. Alexander, St. Louis.—p. 169.
Observations on Formation of Wheals: VI. Response of Normal and Allergic Individuals. F. S. McConnell, St. Louis.—p. 177.
*Use of Suprarenal Cortex Extract in Treatment of Bronchial Asthma. A. H. Fineman, New York.—p. 182.
Emphysema. H. L. Alexander, St. Louis.—p. 191.
Anemophilous Plants of Seligman, Arizona. R. W. Lamson and Alva Watry, Los Angeles.—p. 207.
Atmospheric Pollen. R. P. Wodehouse, Yonkers, N. Y.—p. 220.
Standard for Reading Skin Tests. H. S. Berkoff, New York.—p. 227.

Suprarenal Cortex Extract in Treatment of Bronchial Asthma.—Fineman treated four patients who had severe asthma (three protein sensitive and one nonsensitive), for a period of from one to twenty-seven months, with little or no improvement. He then used suprarenal cortex extract, beginning with a dosage of 0.5 cc. and increasing it up to 4 cc. Injections

were given three or four times weekly during the first month and once or twice weekly thereafter. Subcutaneous and intramuscular injections were administered in each case. Two patients received treatment for four months, one for three months and one for six weeks. One patient showed marked improvement in asthma, one moderate, one slight and one no improvement. In three of the patients a decided increase in strength and appetite was noted, with an average gain in weight of $4\frac{1}{2}$ pounds (2 Kg.). The general condition of the patients was definitely improved. No appreciable change in blood pressure was noted during or at the end of the course of treatment. No influence on the pulse rate was observed. The author believes that the results obtained with the suprarenal cortex extract in the treatment of these four patients warrant its further trial in a larger series of cases, employing larger dosage and utilizing, if necessary, the intravenous route.

Journal of Nutrition, Springfield, Ill.

G: 113-224 (March) 1933

- Nutritive Value of High and Low Calcium-Carrying Wheat. Ethelyn O. Greaves and J. E. Greaves, Berkeley, Calif.—p. 113.
Effect of Diet on Egg Composition: I. Partial Chemical Analyses of Eggs Produced by Pullets on Different Diets. H. W. Titus, T. C. Byerly and N. R. Ellis, Beltsville, Md.—p. 127.
Effect of Dairy Manufacturing Processes on Nutritive Value of Milk: II. Apparent Digestibility of Fresh Whole Milk and of Powdered Whole Milk. W. B. Nevins and D. D. Shaw, Urbana, Ill.—p. 139.
Factors Which Determine Renal Weight: XIII. Heat Production of Rat as Varied by Thyroid Administration. E. M. MacKay, F. M. Smith and K. Closs, La Jolla, Calif.—p. 151.
Id.: XIV. Relative Influence of Amino, Urea and Protein Nitrogen in Diet. E. M. MacKay, La Jolla, Calif.—p. 157.
Is Fluorine an Indispensable Element in the Diet? G. R. Sharpless and E. V. McCollum, Baltimore.—p. 163.
Studies on Growth: I. Growth Factors in Liver. Claire E. Graham and W. H. Griffith, St. Louis.—p. 179.
Id.: II. Effect of Vitamins B and G on Consumption and Utilization of Food. Claire E. Graham and W. H. Griffith, St. Louis.—p. 195.

Journal of Pediatrics, St. Louis

2: 265-392 (March) 1933

- The Pediatrician and Public Health. C. G. Gruce, Chicago.—p. 265.
Meningococcus Meningitis: Plan of Therapy with Criteria for Recognition of Variations in the Course of the Disease. S. S. Lamm, Brooklyn.—p. 273.
*Tubercle Bacilli in Sputum of Children Free from Manifest Pulmonary Tuberculosis, as Determined by Examination of Gastric Sediment. E. Friedman, A. L. Esserman and M. H. Black, Denver.—p. 283.
Blood Picture in Pertussis: Graphic Study. H. E. Thielander, H. G. Henderson and K. Kilgariff, San Francisco.—p. 288.
Whooping Cough Complicated with Intussusception: Report of Case in Three-Month-Old Infant. R. M. Greenthal, Milwaukee.—p. 299.
Herpes Zoster and Disseminated Vesicles (Varicella?). A. E. Fischer, New York.—p. 301.
*Roentgen-Ray Treatment of Some Inflammatory Conditions in Childhood. S. J. Levin, Detroit.—p. 312.
Variations in Reaction to Schick Test. M. B. Hesdorffer, Minneapolis.—p. 318.
Age Incidence and Climatic Variations in Manifestations of So-Called Rheumatic Fever in White Children. C. C. McLean, Birmingham, Ala.—p. 320.
Subacute Bacterial Endocarditis in a Young Child. A. U. Christie and A. H. Heald, San Francisco.—p. 331.
Filterable Bacteria and Their Significance. A. I. Kendall, Chicago.—p. 336.
Antiques of Pediatric Interest. T. G. H. Drake, Toronto, Canada.—p. 347.

Tubercle Bacilli in Sputum of Children.—Friedman and his associates present a study based on a group of sixty children, fifty-one of whom were admitted as preventorium patients and nine for tuberculosis of joints; two children—representing 3.33 per cent of the entire series, or 4.56 per cent of those with a positive tuberculin reaction—showed tubercle bacilli in their sputum. Of the group, forty-four reacted to tuberculin and only seventeen presented definite roentgenologic evidence of the childhood type of infection. No child in the series gave clinical or roentgenographic evidence of pulmonary infiltration. The two children whose sputum was positive for tubercle bacilli differed in no way from their associates. Each of these two patients gave a history of contact with tuberculosis, was a reactor to tuberculin, had only questionable roentgenographic evidence of the nodular type of infection and was free from cough, expectoration, fever and tendency to colds. The tubercle bacilli could not be detected by examination of a pharyngeal smear obtained after forced coughing, or by means of the direct examination of the homogenized sediment of the gastric washings. They were found only on guinea-pig inocula-

tion of the homogenized sediment of their gastric washings. Tubercle bacilli were not observed in smears of the homogenized gastric washings of five children presenting the adult type of pulmonary tuberculosis whose sputum was repeatedly positive for tubercle bacilli by ordinary methods.

Roentgen Treatment of Inflammatory Conditions in Childhood.—Levin has found roentgen radiation to be a valuable form of therapy in whooping cough, asthma, pneumonia and unresolved pneumonia, acute lymphadenitis, parotitis, otitis media and mastoiditis, cellulitis, erysipelas and pyogenic skin infections of children. No deleterious effect from roentgen treatment has been reported in the literature in cases of this type, when the proper technic and correct doses have been used. It is necessary to emphasize that the value of the x-rays is greater when used early in the disease and that the treatment should be given by a competent therapeutic radiologist. In the author's experience, this form of treatment was especially satisfactory in acute lymphadenitis and early mastoiditis. The use of roentgen therapy in the treatment of inflammatory conditions in childhood is deserving of greater and more widespread trial.

Pennsylvania Medical Journal, Harrisburg

36: 391-482 (March) 1933

- Recognition and Treatment of Postoperative Complications. J. F. Erdmann, New York.—p. 391.
Chronic Prostatitis: Foci as Infective Factors. H. Sangree and A. W. Phillips, Philadelphia.—p. 397.
*Newer Concepts in Cancer Treatment Based on Research. R. J. Behan, Pittsburgh.—p. 401.
Pneumonia: Some Remarks on Pneumococci Counts and Serum Therapy. W. W. G. MacLachlan and J. R. Kenney, Pittsburgh.—p. 408.
Infection of Splenoid Sinus as a Possible Cause of Abducens Paralysis. K. M. Houser, Philadelphia.—p. 411.
*Study and Treatment of Sterility. P. Titus, Pittsburgh.—p. 414.
Disinfectants. G. R. Lacy, Pittsburgh.—p. 418.
Place of Continuous Venoclysis in Pediatric Treatment. J. Stokes, Jr., Philadelphia.—p. 421.
Botulism: Report of Two Fatal Cases. S. J. Dickey, Harrisburg.—p. 424.

Newer Concepts in Cancer Treatment.—Behan describes twenty different methods of treating cancer, each of which has had its advocate who claimed success by its use and most of which are to be used only in association with surgery and irradiation. Among the single means of treatment of cancer, surgery apparently has the greatest percentage of cures; even though in some cases its primary mortality is high, yet it is in nearly all cases the treatment of choice. Surgery, irradiation, ligation, calcium, and perhaps some of the heavy metals, and local treatment, i. e., desiccation and cauterization, will give the best final results in the treatment of cancer. One should remember that the host to the cancer is the patient and that his resistance is inviolable and must not be reduced but should, if possible, be increased. Peace of mind, quiet, proper food, blood-forming preparations, hope and rest are essential to cure.

Study and Treatment of Sterility.—According to Titus, the successful treatment of relative sterility depends on an accurate and complete diagnosis of its causes, usually multiple. This study is incomplete unless all steps in a certain, systematic investigation of both husband and wife are carried out. Absolute sterility may be attributed usually to a single gross cause, whereas relative sterility will usually be found due to a combination of minor causes which merely lower the "fertility index." Foci of infection and anemia contribute to lowered physical condition or vitality; minor gynecologic lesions, such as endocervicitis and leukorrhea, often play a major part, and these lesions in particular should be corrected by cauterization, conization or operation. Gross lesions, such as retrodisplacements, fibroid tumors or ovarian cysts, contribute to lowered fertility, while tubal occlusion from adnexal disease results in absolute sterility. The physical examination of the husband may show undescended testes, epispadias or hypospadias and is therefore important. The last two anatomic faults possibly can be overcome by the use of condoms with an orifice cut at a corrective point. The Hühner test gives the greatest possible information as to male responsibility. The wife is asked to report to the office an hour or so after coitus. A small amount of spermatic fluid is recovered from the cervix by a narrow suction syringe and examined microscopically under low power magnification. Many active spermatozoa should be seen. The Rubin insufflation of the tubes is not always merely diagnostic

but in certain instances actually proves to be a therapeutic measure. Passage of gas through the tubes at low pressure, such as from 60 to 80 mm. of mercury, indicates normally patent tubes; the other extreme, no flow despite pressure up to 200 or 210 mm. of mercury, is fair evidence of occlusion. Roentgen visualization after injection of iodized oil serves to localize the site of the lesion. Tubes occluded only at their outer ends, as the result of appendicitis in girlhood, may be opened and repaired by a plastic operation if the patient desires it, whereas tubes completely occluded, because of gonorrhea, are obviously beyond help in this respect. A lowered basal metabolic rate in the wife and husband should be corrected by thyroid extract, because underactivity of the thyroid is frequently associated with other glandular disturbances. The judicious administration of thyroid extract to the lacking wife or husband has frequently been followed by pregnancy.

Surgery, Gynecology and Obstetrics, Chicago

56: 591-718 (March) 1933

- Partial Pancreatectomy in Chronic Spontaneous Hypoglycemia: Review of Cases of Hypoglycemia Surgically Treated. E. Holman and O. C. Railsback, San Francisco.—p. 591.
- Influence of Endometrium on Rabbit Ovary After Hysterectomy. J. V. Sessums, Galveston, Texas, and D. P. Murphy, Philadelphia.—p. 600.
- *Relation of Pulmonary Tuberculosis to Anorectal Fistulas: Clinical, Pathologic and Bacteriologic Study. A. J. Chisholm, Denver.—p. 610.
- Excretion of Bile Pigments in Experimental Obstructive Jaundice. U. J. Salmon, Chicago.—p. 621.
- Pyelometry: Graphic Study of Contractions of Kidney Pelvis. J. L. Jona, Melbourne, Australia.—p. 628.
- *Large Pulmonary Air Cysts of Infancy, with Especial Reference to Pathogenesis and Diagnosis. W. E. Anspach and I. J. Wolman, Chicago.—p. 635.
- Studies in Physiologic and Pathologic Uterine Musculature at Term. L. Zweifel, Newark, N. J.—p. 646.
- *New Muscle Splitting Incision for Resection of Upper Thoracic Sympathetic Ganglions. J. C. White, R. H. Smithwick, A. W. Allen and W. J. Mixer, Boston.—p. 651.
- Total Pulmonary Lobectomy: Simple and Effective Two Stage Technic. J. Alexander, Ann Arbor, Mich.—p. 658.
- Intravenous Pyelography. O. Dyes, Würzburg, Germany.—p. 674.
- Irradiation in a Case of Osteogenic Sarcoma: Recovery. S. Moore, St. Louis.—p. 681.
- Physiologic Rest and Preservation of Locomotion. V. L. Hart, Dayton, Ohio.—p. 687.
- Ovarian Teratomatous Cysts Occurring in Children. C. P. G. Wakeley, London, England.—p. 692.
- Lateral Aberrant Thyroid Glands. S. E. Lawton, Chicago.—p. 696.
- Richter's Hernia. R. B. Cattell, Boston.—p. 700.
- Muscle Pedicle Repairs of Defects in Parietal Pleura. J. B. Stenbuck, New York.—p. 705.

Pulmonary Tuberculosis and Anorectal Fistulas.—In a bacteriologic and histologic study of tissue in 155 cases, in which 106 patients were free from evidences of pulmonary tuberculosis, eighteen had an inactive arrested fibroid phthisis and thirty-one had an active pulmonary tuberculosis, Chisholm concludes that tubercle bacilli are found in patients with ischio-rectal abscesses or anorectal fistulas only if pulmonary tuberculosis is present. He found tubercle bacilli in 77 per cent of the patients with active and in 55 per cent of the patients with inactive (arrested or fibroid) pulmonary tuberculosis, but they were not isolated in the 106 cases in which the patients were free from evidences of pulmonary tuberculosis. These observations suggest a close etiologic relationship between tuberculous ischio-rectal abscess or anorectal fistulas and pulmonary tuberculosis. Histologic methods were found unreliable for determining the tuberculous nature of anorectal conditions, except possibly in the presence of marked involvement with typical tubercle formation and the presence of acid fast bacilli, which was not a common observation in the author's series. The presence of giant cells or granulomatous tissue with monocytes and epithelioid cells proved not definitely pathognomonic of tuberculosis in the anorectal region. Acid fast bacilli are not commonly found in sections or smears from tuberculous ischio-rectal abscesses or anorectal fistulas with the aid of the microscope, even though they are readily found by reliable culture methods or guinea-pig inoculation.

Pulmonary Air Cysts of Infancy.—Anspach and Wolman report two cases of lung cyst observed in infants: one of the cysts originated as a large chamber filled with lymphangiectatic fluid, which evacuated spontaneously and then "ballooned out" with air, producing a fatal outcome; the other, which was not verified by necropsy, showed a constant roentgenologic appearance over a long period. Fluid cysts in infants, which are

usually mistaken for atelectasis, do not have a characteristic roentgenologic appearance, but lung tissue containing air about an area of increased density should arouse suspicion of the presence of a cyst. The diagnosis of balloon cysts depends on successive roentgen and clinical studies and on an understanding of the late stages of pathogenesis. Usually an erroneous diagnosis of pneumothorax has been made. The main roentgenologic diagnostic points of a balloon cyst are the presence of lung tissue at the apex and angles and its absence at the usual hilus region. A collapsed retracted lung shadow, as in simple massive pneumothorax, is not seen on the film. Small air cysts that cannot be differentiated from other air pockets, such as localized pneumothorax, will maintain a more or less constant appearance at a single examination, while the others will show changes and later disappear. On the basis of a study of reported cases and of their own observations, the authors believe that congenital air cysts of the lung contain fluid at birth, and that their postnatal behavior depends principally on mechanical factors.

Incision for Resection of Sympathetic Ganglions.

White and his associates outline a new oblique muscle-splitting incision, which in their hands has avoided much unnecessary bleeding and trauma of the large muscles of the back. The skin incision is made starting a finger's breadth lateral to the spinous process of the seventh cervical vertebra and running obliquely downward and outward over the medial angle of the scapula. This incision need not be more than 8 cm. long. In the case of a bilateral operation, a similar incision is made on the opposite side. The cut is carried down to the deep fascia, and bleeding points are ligated. The incision runs nearly parallel to the fibers of the trapezius, which are now separated by cutting through the fascia and stretching with the fingers. The fibers of the trapezius are then retracted upward and downward, thus exposing the minor rhomboid and levator anguli scapulae muscles. These muscles are separated by blunt dissection and then drawn apart by a pair of retractors. When the serratus posterior superior muscle is split, the three upper ribs and the deep longitudinal back muscles are exposed. The attachments of these deep muscles are then separated from the transverse processes corresponding to the first and second ribs and drawn back by a medial retractor. The resulting exposure gives ample room for resection of the proximal portions of any of the three upper ribs. Generally speaking, if one intends to remove a portion of the cervicothoracic sympathetic trunk extending from above the inferior cervical ganglion to below the second thoracic ganglion, it is easier to reach the upper portion of the trunk through the first rib and the lower portion of the trunk through the second rib. However, as a rule, this portion of the trunk can be resected through either rib. Occasionally, in difficult cases, it is best to remove both. After removal of the rib and transverse process, the pleura is separated from the body of the vertebra with blunt dissection. For this purpose, the operator's index finger is the ideal instrument. The pleura must be separated to a depth of 3 cm. and can best be retracted by the use of a brain spoon. At this depth the sympathetic chain is usually seen running longitudinally and adherent to the sides of the vertebral bodies. If it cannot be located in this way it can be found by search for the sympathetic rami, which leave the second intercostal nerve and join the sympathetic trunk about a centimeter deeper down. Once the trunk is located, it should be drawn up on a nerve hook and followed both upward and downward by blunt dissection. Through either a first or second rib resection it is possible to follow the trunk downward and cut it beneath the small second thoracic ganglion. Then with downward traction and by successive cutting of the small sympathetic rami as they leave the trunk, it should be possible to visualize two large ganglions higher up. It is important to have a good exposure in order to avoid injury to the first thoracic nerve. After the large ramus joining the first thoracic ganglion to its spinal nerve is cut, it is not difficult to draw the sympathetic trunk downward to a point where the inferior cervical ganglion can be safely dissected out. The incision is closed tightly unless persistent oozing demands drainage. As the retractors are removed, the muscle edges fall together and require only a few interrupted catgut sutures for perfect apposition. A row of interrupted sutures through the deep fascia of the trapezius, and silk sutures for the skin, complete the operation.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45: 85-132 (March) 1933

Spirochaeta Pallida or *Treponema Pallidum*. W. A. Pusey.—p. 85.
"New Phase in Early Syphilis": Some Explanations. E. T. Burke.—p. 87.

*Acute Disseminated Lupus Erythematosus: Five Fatal Cases. A. C. Roxburgh.—p. 95.

Acute Disseminated Lupus Erythematosus.—Roxburgh reports a study of five cases of acute disseminated lupus erythematosus, all fatal. The disease is more common in women than in men and in patients between 20 and 30 years of age. Most cases begin as the chronic localized type of lupus erythematosus. There is no evidence to show why they change to the acute disseminated type. There is no way of telling whether any given case of chronic fixed lupus erythematosus is likely to change to the acute type. Arthritis, arthralgia and muscular pains, albuminuria, a purpuric type of eruption and high temperatures are of evil import if occurring in a case of lupus erythematosus, as they suggest the onset of the fatal stage of this disease. No assistance in diagnosis is forthcoming from the leukocyte count, which is within normal limits, or from blood cultures, which are usually sterile until near the end. After the onset of acute symptoms, death is not likely to be delayed more than from one to four months. The cause of death is streptococcal septicemia. Tuberculosis has nothing to do with this form of the disease.

British Journal of Radiology, London

6: 129-192 (March) 1933

Plastic Surgery in Chronic Radiodermatitis and Radionecrosis. H. D. Gillies and A. H. McIndoe.—p. 132.

Late Roentgen-Ray and Radium Effects: Incidence, Etiology and Medical Treatment. N. S. Finzi.—p. 148.

A Valve-Operated Time Switch. W. R. Gray.—p. 162.

Radiographic Examination of Welds. R. A. Stephen.—p. 165.

Future of Technical Radiology. C. N. Kemp.—p. 166.

A 500-Kilovolt X-Ray Therapy Unit. W. E. Schall.—p. 175.

New Radiographic Technic Employing "Rotalix" Tube. H. Franke.—p. 179.

British Journal of Urology, London

5: 1-112 (March) 1933

*Prevention and Treatment of Urethral Stricture of Inflammatory Origin. J. C. Ainsworth-Davis.—p. 1.

*Carbuncle of Kidney: Report of Two Cases of Bilateral Involvement. F. S. Patch and R. G. Reid.—p. 34.

Urethral Stricture of Inflammatory Origin.—Ainsworth-Davis states that stricture of the urethra is due to imperfectly treated gonorrhea and may take years to develop. Stricture and its complications are of such a serious nature that every effort should be made to ensure early diagnosis and treatment. Unfortunately, symptoms are rarely experienced before the caliber of the urethra has been reduced to about one third of its normal size; i. e., 15 Charrière. Stricture is curable, provided treatment is carried out in the right way, which consists in making it retrace its own footsteps by regular instrumentation: this gradually brings about rupture of the inner layers of fibrous tissue, which are then absorbed during the intervals of treatment. Efficient local anesthesia renders this treatment painless, a great factor in ensuring regular attendance. Late diagnosis and the presence of complications call for the use of a variety of periurethral instruments. Neglected cases and the occurrence of certain severe complications may necessitate operations, sometimes immediate, as a life saving measure. The best procedure is suprapubic cystostomy, any direct operative attack on the stricture being avoided at the time, and an attempt being made by instrumentation at a later date. The author summarizes the treatment of certain preinstrumental and postinstrumental complications of stricture, such as urethral discharge, urethral flakes, prostatitis, vesiculitis, epididymitis, periurethral abscess, fistula, false passage, extravasation, hemorrhage, "catheter" fever, retention of urine, and the breaking off of a guide.

Carbuncle of Kidney.—Patch and Reid report two fatal cases of bilateral renal carbuncle, both proved by necropsy. One of the cases showed a typical carbuncle of the liver. They also report two cases of presumable renal carbuncle with peri-

nephric abscess. Both patients recovered following drainage of the abscess. The value of the pyelogram in arriving at a diagnosis has been demonstrated in the two cases of presumed renal carbuncle. The authors' two cases emphasize the advantages of early diagnosis and conservative therapy. In all obscure cases, when even slight signs and symptoms suggest urinary tract involvement, a full urologic study should be made.

British Medical Journal, London

1: 399-442 (March 11) 1933

Midwifery in the Home. T. W. Eden.—p. 399.

Hepatomegaly with Persistent Ketonuria in a Child: Probably a Case of Von Gierke's "Glycogen Accumulation Disease" with Functional Recovery. C. Worster-Drought, with remarks in collaboration with F. P. Weber.—p. 403.

Acute Obstruction of Colon. J. P. Lockhart-Mummery.—p. 405.

*Quantitative Modification of Bendien Reaction in Serodiagnosis of Malignancy. E. C. Lowe.—p. 407.

Typhoid Paratyphoid in Institution Sewage. G. W. T. H. Fleming.—p. 412.

Modified Bendien Reaction in Cancer.—Lowe describes a quantitative modification of the Bendien test for cancer. He employed this method in 362 cases presenting various degrees of malignancy, ranging from the most advanced and obvious to the earliest and clinically uncertain type. The primary tube reaction showed it to be insufficient for the diagnosis of a malignant condition. The triple test (the author's modification) must be employed and will then differentiate malignant from nonmalignant conditions in at least 95 per cent of cases. The clinical diagnosis and the degree of positiveness shown by the test closely correspond. Postoperative cases of cancer, or those receiving radium, roentgen, or other forms of treatment, may be followed up by means of this test, and clinical information may thereby be obtained regarding prognosis and treatment. The author refers to cases in which satisfactory clinical improvement and apparent cure is associated with the continued presence of a normal or nonmalignant serum reaction. In some cases the serum reaction has foretold a recurrence months before clinical observations have confirmed it. Among normal and clinical nonmalignant conditions a certain percentage of abnormal reactions occur, suggesting the possibility of recognizing in such cases a precancerous tendency. The test is delicate and reliable, more satisfactory as a laboratory technic than any other at present available, and should be of value as a clinical aid to the diagnosis and prognosis of malignant conditions, especially in early cases.

Journal of Pathology and Bacteriology, Edinburgh

36: 201-332 (March) 1933

Examination of Relationship Between Streptococcus Antitoxin and Antistreptolysin. E. W. Todd, L. J. M. Laurent and N. G. Hill.—p. 201.

Regulation of Marrow Activity: Experiments on Blood Transfusion and on Influence of Atmospheres Rich in Oxygen. A. E. Boycott and C. L. Oakley.—p. 205.

Influences of Breathing Carbon Monoxide and Oxygen at High Percentages for Prolonged Periods on Development of Tar Cancer in Mice. J. A. Campbell.—p. 243.

Peculiar Form of Muscular Hyperplasia of Intima of Small Arteries. M. J. Stewart.—p. 249.

Experimental Skin Tumors in Rat Produced by Tar. A. F. Watson.—p. 251.

Changes in Liver in Fatal Case of Epidemic "Catarrhal" Jaundice. J. F. Gaskell.—p. 257.

*Separation from *Clostridium Welchii* of Variants Which Differ in Toxicity and Antigenic Structure. C. A. McGaughey.—p. 263.

Study of Gliomas by Method of Tissue Culture. Dorothy S. Russell and J. O. W. Bland.—p. 273.

Dissociation in Certain Mycobacteria, with Especial Reference to Type Stability. May H. Christison.—p. 285.

Classification of Dysentery-Coli Bacteriophages: I. Differentiation by Bail's Methods of Phages Lysing a Typical *Bacillus Coli* Strain. F. M. Burnet and Margot McKie.—p. 299.

Classification of Dysentery-Coli Bacteriophages: II. Serologic Classification of Coli-Dysentery Phages. F. M. Burnet.—p. 307.

Influence of Heat on Antigenic Properties of Diphtheria and Tetanus Forol Toxoids. A. J. Van Den Hoven Van Genderen.—p. 319.

Variants of *Clostridium Welchii*.—McGaughey isolated two variants from an authentic strain of *Clostridium welchii*, by selection and repeated subculture of colonies, which have remained stable during a period of observation of about four years. The variants differed from the parent strain and from one another in form of colony, growth in broth, size and shape of individual bacilli, sporulation and formation of capsules. They resembled the parent strain and one another in fermentation activity, giving an acroline test, liquefying gelatin and

producing a stormy clot in milk. At one stage one of the variants appeared to be incapable of producing toxin but later produced small amounts of toxin in culture. The other variant produced from three to six times as much toxin as the parent strain. The production of hemolysin in culture followed exactly changes in the production of toxin. By agglutination tests the antigens of both variants differed completely from the parent strain. The antigens of the variants were closely related and perhaps identical. Mucoïd types of the parent strain and of both variants have been noted. The importance of these results in the production of *Clostridium welchii* toxin and their possible application to the study of *Clostridium welchii* infection and immunity is suggested.

Lancet, London

1: 509-562 (March 11) 1933

- *Treatment of Enlarged Tonsils in Children. T. B. Layton.—p. 509.
Thoracic Surgery. H. M. Davies.—p. 511.
Advance in Surgery of Cleft Palate. D. Levi.—p. 515.
Dysinsulinism: Case. W. J. Griffiths and O. L. V. de Wesselow, with comments by P. J. Cammidge and E. P. Poulton.—p. 519.
*Sedimentation Rate and Ultimate Prognosis in Tuberculosis: Investigation into After-History of Five Hundred Cases. R. R. Trail.—p. 522.
*Streptococcal Meningitis: Case with Recovery. J. K. Rennie and W. S. Craig.—p. 524.

Treatment of Enlarged Tonsils in Children.—Layton doesn't believe that there is as yet any local treatment of the tonsils that can compare with operative surgery. Size is no indication for removing tonsils. The great indication is the history of recurring follicular tonsillitis, and this is more important than any appearance of the tonsil. Children need lymphoid tissue in their respiratory tracts, and they do not get follicular tonsillitis in the earlier years of life. Therefore, operations on a child up to 5, 6, 7 and 8 years of age should not be done unless it cannot possibly be helped and the need for it can be proved. After that age the operative treatment of the tonsils is a practical problem, but the author thinks that the best results come after the age of 12 rather than before.

Prognosis in Tuberculosis.—In his follow-up study of 500 consecutive cases of pulmonary tuberculosis extending over a period of six years, Trail found that considerable value must be given to the sedimentation rate in assessing ultimate prognosis. It is usual to assess such prognosis on physical signs, temperature, pulse, sputum tests and the patient's fitness for exercise judged on the results of "exercise tests." It is well known how such criteria can lead the physician astray, but the sedimentation rate may be a decided help, since the prognosis becomes increasingly grave with the higher rates of sedimentation. If a patient enters the sanatorium with a figure of more than 20 and leaves with a figure of more than 10, it means a grave prognosis; this applies to all patients presenting clinical tuberculosis, "open" and "closed," and, while the gravity increases in positive tuberculosis and, in particular, in those who remain so in spite of treatment, it appears that it is better for the patient to remain positive and secure a fall in the sedimentation rate to less than 10 than to become negative with a discharge figure of more than 10. Artificial pneumothorax reduces the sedimentation rate: the average fall in twenty cases was from 31 per cent to 14 per cent. Rest is the best of all treatments. Once the patient has been assessed, the amount of rest required, the capacity for increasing movement in "graduated rest," and the fitness for the return to work ought to be based as much on the movements of his sedimentation rate as on his pulse, temperature, "exercise tests," and sputum results. Both immediate results and after-results may be benefited and the physician may be distinctly aided in his difficulty of the evaluation of prognosis.

Streptococcal Meningitis.—Rennie and Craig report a case of streptococcal meningitis and state that a striking feature of the more recent cases, and one well exemplified in their case, is the rapidity of progress, once improvement is established. How far this is due to the use of the various serums is difficult to say, but it seems more than likely that they exercise an influence on the course of the disease. Lumbar puncture alone or in combination with some other method is the procedure most generally adopted. Operative measures—e. g., mastoidectomy and labyrinthotomy—have been employed, but only when the source of the infection lay in the ear. When a block in the spinal canal has taken place and little fluid has

been obtained by lumbar puncture, cisternal puncture has been resorted to. In several cases antiseptics were used to wash out the spinal canal: acriflavine hydrochloride and a 1 per cent solution of mercurochrome. More recently, serum has been administered in addition to any other procedure. Of the serums employed, the antimeningococcus serum has been used most frequently in the first instance before a report on the cerebrospinal fluid has been obtained, and in one case (Ebert) recovery followed the use of this serum alone. Once the true state of affairs has been recognized polyvalent antistreptococcus serum has been extensively used, and results have certainly been better since its introduction. In streptococcus antitoxin (scarlatina) globulins, which has more recently become available, one has probably a much more potent agent. The authors believe that the intramuscular administration of 20 cc. of scarlatinal serum was responsible for their patient's rapid recovery, although large doses of polyvalent serum were previously administered.

Medical Journal of Australia, Sydney

1: 299-330 (March 11) 1933

- General Anesthesia in Oral Surgery. G. R. Troup.—p. 299.
Choice of Anesthetic in Oral Surgery. V. A. Read.—p. 301.
Bacteriologic Investigation of a Series of Tonsils Removed by Operation. W. C. Sawers and F. R. Barrett.—p. 304.
Diagnosis of Diseases of Heart and Aorta: Radiologic Study. F. J. Gwynne.—p. 307.

South African Medical Journal, Cape Town

7: 133-168 (March 11) 1933

- Hereditary Syphilis: Manifestations of Hereditary Syphilis in Children. C. L. Leipoldt.—p. 135.
Id.: Syphilitic Manifestations of Urogenital Disease. K. Frater.—p. 136.
Id.: Ophthalmologic Aspect. A. W. S. Siebel.—p. 138.
Id.: Dermatologic Venereal Aspect. F. Krone.—p. 142.
Id.: Syphilitic Manifestations in Ear, Nose and Throat. K. Bremer.—p. 147.
Id.: Neurosyphilis. F. H. Kooy.—p. 149.
Puerperal Sepsis. Ella Britten.—p. 152.

Revue Française de Pédiatrie, Paris

9: 153-272 (No. 2) 1933

- *Aplastic Infantile Anemias. L. Morquio and A. Volpe.—p. 153.
*Metabolism of Iron in Breast-Fed Infants During First Year of Existence. A. Wallgren.—p. 196.
Clinical and Anatomic Study of Congenital Laryngeal Cysts in the New-Born. Mme. G. P. Bellocq and R. Pernot.—p. 236.
Lymphoid Leukemia in Infant Splenectomized for Hemogenia. E. Schneegans.—p. 256.

Aplastic Infantile Anemias.—Morquio and Volpe report eight cases of infantile aplastic anemia which were confirmed by necropsy. This hemopathy is characterized clinically by a grave anemia appearing insidiously under the symptoms of asthenia, loss of appetite, slight loss of weight and rapidly increasing pallor. It is usually accompanied by purpuric manifestations varying from petechial eruptions to intense, repeated eruptions having the aspect of a severe primary purpura haemorrhagica and diphtheroid necroses. These were seen in only one of the authors' cases in the form of a Vincent's angina but have frequently been reported in adults. Hematologically this anemia is characterized by an erythroleukothrombopenia. There is an absolute absence of erythroblasts of all kinds, and all signs of erythrocytic regeneration are completely lacking. The leukopenia is characterized by an absolute and relative lymphocytosis and a granulocytopenia which may be marked, showing an absence of myeloid reaction. There is no decrease of globular resistance and there are no signs of hyperhemolysis. A positive diagnosis of aplastic anemia demands the absence of phenomena of hyperhemolysis and the confirmation of a myeloid aplasia as the cause of the aregenerative blood formation. This is obtained by medullary biopsy, by tibial or sternal trepanation which shows, macroscopically and microscopically, atrophy of the bone marrow and absence of all hematopoietic activity. Differential diagnosis involves primarily certain cases of aleukemic lympholeukosis and preleukemic or atypical leukemic states in which the clinical manifestations of anemia and the hematologic manifestations of erythropenia dominate while the leukocytosis is nearly normal and the lymphocytosis presents only rare embryonic cells of the lymphoblastic type. There is no doubt about the diagnosis if the evolution is definitely toward the leukemic formula; if it is not, the diagnosis can be made only by

medullary biopsy or necropsy. Clinically, this cryptogenic anemia, once it is established, progresses rapidly and is not arrested by hepatotherapy, transfusions, or roentgen therapy in stimulating doses. In six of the cases of infantile aplastic anemia seen by the authors, the course of the disease was acute; the period between the first perceptible signs and death varied between two and three months. Only one case had a slow evolution lasting eight months.

Metabolism of Iron in Breast-Fed Infants.—Wallgren conducted twenty-one experiments on the metabolism of iron in five nurslings between the ages of 3 weeks and 11 months. The experiments lasted from seven to ten days each. During this time the total quantity of iron ingested in the form of breast milk and in weaning fluids was determined and quantitative determinations of the iron excreted in the urine and feces were made. In three of the infants the experiments showed a positive iron balance, analogous to that observed by Langstein and Edelstein and which may be considered as the normal balance of children born at term. In one child, also born at term, the iron balance behaved as in the experiments of Lichtenstein on premature infants; that is, it was negative in the first five months but without the production of a decrease in hemoglobin, such as one observes in the anemias of premature infants. In the fifth child, the balance during the first five months was at times negative and at times positive. Although the quantity of iron contained in breast milk averages only 0.642 mg. for 1,000 Gm., it suffices to cover the needs of the infantile organism for iron from the exterior, provided the value of the hemoglobin stays within normal limits. As it may be supposed that this small daily supply of iron is insufficient to cover the total requirements of iron for reconstruction of the blood of the infant and so on, it is probable that the organism is capable of utilizing part of the iron found in its organs at the moment of birth and liberated by the destruction of the erythrocytes. On the other hand, the larger quantities of iron excreted in the feces during the first months may show that a portion of the iron existing in the organs at the moment of birth is eliminated as a waste product, useless to the organism.

Policlinico, Rome

40: 843-882 (May 29) 1933. Practical Section

*Practical Value of New Test of Hepatic Function. G. Migneco.—p. 845.
Special Serologic and Clinical Behavior of Syphilis. F. Sebastiani.—p. 851.

Free Fibromyoma in Peritoneal Cavity. A. Cester.—p. 855.
Intramuscular Lipoma: Case. P. Benini.—p. 858.

Practical Value of New Test of Hepatic Function.—Migneco studied the value of the modification of the dextrose tolerance test of Althausen and his collaborators as an index of metabolic activity of the liver. The test consists of determining the amount of blood sugar after twelve hours of fasting, followed by subcutaneous injection of 20 units of insulin. Twenty minutes later 50 Gm. of dextrose in 500 cc. of water is administered orally, followed by 1 liter of water. The determination of the blood sugar is repeated one-half hour, one hour, two hours and three hours from the ingestion of the dextrose. They observed in normal subjects a glycemic curve with an ascending stage during the first hour (35 per cent increase), followed by a gradual decrease until after three hours the curve had reached its initial stage. Patients with hepatic diseases showed either a hypoglycemic type of curve with an uninterrupted drop of the glycemic rate during the complete test or a hyperhypoglycemic type in which the drop was preceded by an elevated and permanent hyperglycemic phase. They concluded that terminal hypoglycemia, under the conditions of the test, should show a hepatic dysfunction and that the dividing line between normal and pathologic results should be about 70 mg. of dextrose in 100 cc. of serum. The author administered this test to thirty-four patients, of whom nine were normal and thirteen suffered from hepatic diseases, eight from nonhepatic diseases and four from diabetes. He reports on six normal persons and six with diffuse hepatic lesions of various types. Roentgenograms of the six normal persons before the test showed no disturbances, hepatic or otherwise. Yet three of the patients showed hepatic curves while the glycemic rate fell to 67, 46 and 35 mg., respectively. In all cases the glycemia fell to 50 mg. In one, disturbances due to hypoglycemia arose requiring an immediate operation.

The test offered disconcerting results in the six patients with hepatic lesions. The glycemic rate of one dropped to 53 mg., of another to 43 mg. and of a third to 32 mg. Two patients with the most serious hepatic lesions in the group gave negative results, their curves falling to 31 and 22 mg. Since normal persons registered a hepatic type of curve while patients with hepatic diseases showed a normal curve, the author concludes that this test has little merit.

Archiv für klinische Chirurgie, Berlin

175: 181-356 (May 22) 1933

Anterior Thoracic Plastic Operation on Esophagus. E. Ruge and A. Püschel.—p. 181.

Relation of Chronic Gastric Ulcer to Gastric Carcinoma. A. Rothmann.—p. 201.

Experimental and Clinical Studies of Tone of Striated Muscles in Relation to Operative Procedures on Sympathetic Nervous System in Spastic Paralysis. H. Kasumov.—p. 216.

Pyelogram in Kidney Tumors. K. Boshamer.—p. 238.

Resection of Shoulder Joint for Tuberculosis. H. Meyer-Burgdorff.—p. 250.

*Lipoid Infiltration of Gallbladder. J. Berendes.—p. 266.

Case of Healed Osteomyelitis of Sternum. K. Kamniker.—p. 283.

Healing of Brain Wounds After Electrocoagulation. F. M. Lissza and S. J. Minkin.—p. 288.

*Leukocytic Picture in Topical Diagnosis. I. A. Hayes, A. Spizin and P. Oransky.—p. 300.

Endometroid Heterotopias. Z. W. Maukin.—p. 314.

Plastic Hemostatic Substance for Operations on Skull. B. Fuchs.—p. 335.

End Stages of Köhler's Disease in Child's Navicular Bone of the Foot. H. Dieterich.—p. 340.

Treatment of Skin Carcinoma with Carbon Dioxide Snow. A. A. Epstein.—p. 344.

Lymphadenoma of Rectum. A. A. Epstein.—p. 351.

Lipoid Infiltration of Gallbladder.—Berendes submits a histologic study of 127 so-called strawberry gallbladders found among 2,492 necropsies performed in the Pathologic-Anatomic Institute of the University of Freiburg between 1928 and 1932. In a previous work, Ludwig Aschoff stipulated that the small yellowish elevations seen on the gallbladder mucosa were not fat accumulations but an especial form of storing of fat by the endothelial cells of the lymphatic vessels. Chemical analysis showed these to be a mixture of cholesterol ester and fatty acids. They were frequently found in entirely normal gallbladders. The bile in such gallbladders frequently contained small specks which on polaroscopic examination showed the double refraction characteristic of cholesterol crystals and, when reduced to a liquid state, the characteristic maltese cross configuration of cholesterol plaques. By means of the sudan stain the author demonstrated that the lipoid infiltration was limited principally to the endothelial cells of the lymph vessels of the submucous layer. The fact that the richest deposits of cholesterol ester occur in the summit of the projecting mucous villi and that the strawberry gallbladder is frequently associated with bile stasis suggests that the lipoid infiltration here is the result of absorption of cholesterol from the bile rather than of excretion into the bile. A causal relationship is suggested between cholesterol infiltration and cholesterol stone formation. Mucous villi, laden with fat and projecting into a bile saturated with cholesterol, may become detached from their slender pedicles and float as free bodies in the bile. They may serve as nuclei for the formation of gallstones. Addition of desquamated epithelium of the gallbladder to bile in a test tube experiment was shown to augment the precipitation of cholesterol from it. The end product of cholesterol precipitation in stasis of the gallbladder is radial cholesterol stone. Attention is called to the report of Judd and Mentzer in which it is stated that 99 per cent of stones found in instances of strawberry gallbladders seen by them were pure cholesterol stones and that in 30 per cent these were solitary cholesterol stones. In the author's series there were only two instances of mixed stones, while the remaining seven were solitary radial cholesterol stones. The following conclusions were drawn: 1. Storing of lipoids in the wall of the gallbladder is the result of resorption. 2. There is no causal relationship between storing of lipoids and formation of gallstones. 3. Disturbance of the cholesterol metabolism of the entire organism is probably not the cause of lipoid infiltration of the wall of the gallbladder. 4. Storage of lipoids is the result of the process of absorption of increased cholesterol ester content in the gallbladder bile. The slowing of the lymph current appears to have an influence on the process.

Leukocytic Picture in Topical Diagnosis.—On the basis of 15,000 blood counts after the method of Schilling, Hayes and his co-workers draw the following conclusions: 1. The shift to the left does not possess the prognostic value assigned to it by its author. Diseases other than those of the gastrointestinal tract and of the pleura do not display this phenomenon. When the shift to the left does take place in these diseases, it is due to some gastro-intestinal disturbance which can be easily eliminated. 2. The variable size of rods (nuclei) and of juvenile forms is not an accidental but a constant phenomenon and enables one to make a topical diagnosis. 3. The phenomenon of paragglutination is of considerable diagnostic and prognostic significance. It occurs in local as well as in general infections.

Beiträge zur klinischen Chirurgie, Berlin

157: 449-560 (May 17) 1933

- Deforming Arthritis of Cervical Vertebrae. R. Kienböck.—p. 449.
Roentgenologic Appearance of Pyloric Hypertrophy and of Pyloric Contractions in Chronic Gastritis and in Ulcer of the Stomach. F. Serck-Hanssen.—p. 464.
*Contribution to Etiology of Chronic Duodenal Stenosis and of Megaduodenum. E. Kraas.—p. 489.
Hip Dislocations Result of Lack of Development of Acetabulum. B. Simons.—p. 505.
Juvenile Deforming Osteochondritis of Elbow. O. Winterstein.—p. 527.
Large Hernia of Bladder. M. Makkas.—p. 536.
*New Contributions to Operative Treatment of Acute Pancreatitis. G. Hartlieb.—p. 539.

Chronic Duodenal Stenosis and Megaduodenum.—Kraas reports seven cases of megaduodenum observed in Schmieden's clinic. He accepts Melchior's and Duval's definition of megaduodenum as an enlargement of the duodenum without recognizable cause, the condition being taken as a congenital anomaly. Another type of chronic duodenal stasis exists; namely, that due to chronic arteriomesenteric obstruction. It may be produced by disorders of the neighboring organs with secondary stenosis of the descending portion of the duodenum or of the duodenojejunal flexure. Enteroptosis, especially of the transverse colon, is considered by some as an important etiologic cause. The symptoms in megaduodenum may be entirely absent. When present, they are characterized by long duration, a sense of fulness in the right upper quadrant of the abdomen and frequently severe, nightly colics in the same region. The clinical picture suggests an ulcer. Roentgen study is the most important method of recognition of the condition, which is frequently associated with a diverticulum or an ulcer. The diverticulum is regarded as a congenital anomaly rather than the result of stenosis. Duodenojejunostomy is considered the operation of choice in the cases in which motor disturbances are prominent. When the presence of an ulcer suggests the advisability of partial gastric resection, a Billroth II operation with the Y anastomosis of Roux is recommended because it is capable of preventing regurgitation of gastric contents into the duodenal stump.

Operative Treatment of Acute Pancreatitis.—Hartlieb is opposed to the prevailing idea of early intervention in acute hemorrhagic pancreatitis. He cites twenty-three cases from the Nordmann clinic in which the operation consisted of the removal of the gallbladder and drainage of the common bile duct. Eleven of the patients got well and twelve died. Two patients were too sick to be operated on. They went on to formation of abscesses which were later drained and they recovered eventually. In a later group of seven patients treated conservatively, five got well and two died. In contradistinction to his own views, the review of recent works by several authors indicates a preference for the earliest possible operative intervention. Unanimity of opinion exists as to the importance of gallstone disease in the etiology of acute pancreatic necrosis. The diagnosis is not particularly difficult. The most valuable test is the serum diastase determination of Wohlgemuth. An increase of the blood sugar is suggestive. Guleke found glycosuria in 10 per cent of his cases. The author quotes instances to show that early operative intervention is not always capable of arresting the destructive process in the pancreas. Effusion into the peritoneal cavity is not as dangerous as was formerly believed, because it is always sterile in the beginning. The introduction of drains, however, converts a sterile process into a suppurating one. All the authors reviewed were in favor of the earliest possible intervention.

Deutsche medizinische Wochenschrift, Leipzig

59: 755-796 (May 19) 1933

- Behavior of Peripheral Circulation in White and Red Hypertension. M. Nordmann.—p. 755.
Experiences with Nitrogen Monoxide Anesthesia in Obstetrics and Gynecology. C. Margraf.—p. 757.
*Late Sequelae in Stomach and Intestine After Bacillary Dysentery. A. Ohly.—p. 760.
Case of Hypophyseal Diabetes Insipidus with Arthritis of Left Wrist and Ankle Joints. H. Hennes.—p. 762.
*Nonsurgical Mobilization of Gonorrheal Ankylosis of Knee Joint. Mosenthal.—p. 763.
Experiments on Etiology of Haff Disease. J. Fortner, K. Otto and B. F. von Bülow.—p. 766.
Is Chronic Intermittent Treatment of Syphilis Still Justified? F. Lesser.—p. 767.
*Rare Blood Status: Hyperproteinemia in Myeloma. M. Bönninger.—p. 770.
Examination of Function of Kidney by Alkali Tolerance Test. Mia von Buengner.—p. 771.
Giant Suppositories as Substitute for Clysters. M. Lewin.—p. 772.

Sequelae After Bacillary Dysentery.—Ohly points out that bacillary dysentery is not a uniform disease, etiologically (many different dysentery bacilli) or anatomically (varied and changing symptoms). The same applies also to the late sequelae of the disease. The symptomatology is mainly determined by the localization of the disorder. For the recognition of post-dysenteric disorders, the anamnesis is of great importance. If it reveals that the patient has had sanguineous-mucous diarrhea with tenesmus and fever, he most likely has had a dysenteric disorder. A large percentage of the late sequelae have the aspects of chronic relapsing gastro-enteritis or of gastro-enterocolitis. The colonic symptoms generally predominate. The diarrheal form is mostly painless, but the spastic form is often extremely painful. To insure a correct diagnosis the author recommends careful examination of the feces, roentgenoscopy and endoscopic examination. The differential diagnosis of dysenteric enterocolitis is frequently difficult, because the disorder often simulates such conditions as gastroduodenal ulcer, cholecystopathy, appendicitis and even pancreatic disorders. Moreover, it is possible that one of these disturbances develops on the basis of a chronic dysenteric gastro-enterocolitis. The postdysenteric colitides are frequently complicated by anal eczema. The impairment of the gastro-intestinal mucous membrane is much more severe in the postdysenteric than in other forms of gastro-intestinal disorders, which makes the prognosis comparatively unfavorable. Relapses are frequent, particularly following a carelessness in the diet or an exposure to cold. Food rich in cellulose should not be eaten in large quantities. Fresh yeast bread, food with high fat content and cold drinks are likewise inadvisable. In cases in which carbohydrate fermentation and diarrhea predominate, it is helpful to let the patient fast for a day and to allow him only hot tea. Carbohydrates should be avoided for about a week, during which time the diet should consist primarily of proteins. In patients with achylia, medicinal therapy in the form of hydrochloric acid, pepsin and other preparations is advisable. The application of heat in various forms is also helpful. Because the long duration of the disturbance may lead the patients to develop carcinophobia or other phobias, psychotherapy should not be neglected.

Nonsurgical Treatment of Gonorrheal Ankylosis of Knee Joint.—Mosenthal admits that bony ankylosis requires surgical interventions but shows that fibrous ankylosis, the most frequent form of gonorrheal ankylosis, can be treated nonsurgically. Roentgenoscopy is the best help in determining whether surgical or nonsurgical interventions should be employed, and it is essential to exclude the existence of an infection. To do this the author recommends agglutination tests with the most frequently occurring pathogenic organisms, repeated leukocyte counts, determination of the sedimentation speed of the erythrocytes, mechanical irritation and eventually irritating irradiations. In patients who have had gonorrhea it is essential that the disease be not only completely cured but that there be an interval of at least two years between the cure and the intervention. The author employed nonsurgical mobilization in three cases, in all of which it was successful. In two of the patients the ankylosis had existed for two and three years, respectively. The third patient, whose clinical history is described, had had a stiff knee for seven years. Since the roentgenogram revealed no bony bridges but only proliferations on the articular surfaces, the author decided to

attempt mobilization under deep anesthesia. During an attempt to mobilize the joint, the patella made a cracking noise, and after this it was no longer difficult to attain a 90 degree movement of the knee. The joint was kept in the flexed position for eight days, and after that an intensive movement therapy was begun. The patient is now able to work, is free from pain, and is entirely satisfied with the results. Even a plastic operation would hardly give better results. The author points out that, in two cases of beginning articular complications, he was able to obtain rapid improvement by treatment with roentgen rays (inflammation dose). After a few days, articular movements could be begun and a stiffening of the joints thus prevented.

Hyperproteinemia in Myeloma.—Bönniger relates the history of a man, aged 52, who complained of general debility and of pains in the hips and legs. The patient was extremely pale. The hemoglobin content of the blood was reduced to half the normal value, and the volume of the blood corpuscles was correspondingly decreased. The number of erythrocytes could not be determined because the blood coagulated as soon as it came in contact with Hayem's solution. The blood count could be made in physiologic solution of sodium chloride, and the numbers corresponded to the hemoglobin content (orthochromic anemia). When a drop of blood was put into a 25 per cent solution of corrosive mercuric chloride, coagulation took place immediately, a drop of serum solidifying at once and sinking to the bottom, whereas normal serum forms at first a homogeneous cloudiness and later precipitates. The patient's serum showed still other peculiarities; it was syrupy and was sticky like acacia, and the blood corpuscles, its own as well as foreign ones, had an agglutinative tendency. The sedimentation speed of the erythrocytes was highly accelerated. Bleeding time, coagulation time and fibrinogen content were normal, but the blood clot showed only a slight tendency to retract. It seemed probable that the peculiar behavior of the blood was connected with the protein bodies of the blood plasma. Tests revealed a considerable increase in the specific gravity of the plasma and of the serum, and the refractometer value of the protein was 13 per cent, compared to 8 per cent in normal persons. The nitrogen value was correspondingly increased, and the viscosity could not be measured with the Hess instrument, because the instrument is not standardized for such high protein values. Roentgenoscopy had revealed the typical aspects of myeloma. The changes were most severe in the femurs and the hip bones. The author points out that other reports on myeloma mention changes in the blood status, such as an increase in the euglobulin, but that only two state that it was impossible to count the erythrocytes. However, these authors do not mention whether they employed Hayem's solution. At any rate, it is noteworthy that the coagulation set in only during the erythrocyte count, whereas other tests, such as the determination of the hemoglobin and the white blood count, could be made. Another worker mentions coagulation at the withdrawal of blood for the Wassermann test, whereas other blood tests apparently could be made without difficulty. The author concludes that the blood condition in myeloma probably varies in different cases, but he thinks that, if the described phenomenon is observed, the possibility of a myeloma should be considered.

Deutsche Zeitschrift für Nervenheilkunde, Berlin

131: 125-204 (May 9) 1933

- Pathologic Anatomy and Pathogenesis of Multiple Sclerosis. M. S. Margulis.—p. 125.
- *Symptomatology and Diagnosis of Nonotogenic Abscesses of Cerebellum and Cause of Sudden Death. K. Stern.—p. 144.
- *Rare Complication of Suppurative Mastoiditis: Compression of Medulla Oblongata as Result of Osteomyelitic Destruction of Atlas. R. Lorenzo and R. J. Delatienda.—p. 163.
- Electrodiagnosis: Influence of Procaine Hydrochloride on Electric Reaction, Particularly Chronaxia of Muscle and Its Nerve. H. Siems.—p. 169.
- Id.: Peculiar Case of Persistence of Contraction and Its Modification by Procaine Hydrochloride. H. Siems.—p. 181.
- Electrical Irritability of Sensory Cutaneous Nerves in Percutaneous and Intracutaneous Tests. S. Heinrichs.—p. 191.
- *Reduction of Sedimentation Speed of Erythrocytes in Neurotic and Psychopathic Persons. Liselotte Range.—p. 198.

Abscesses of Cerebellum.—The anamnesis of Stern's first patient reveals that fifteen years previously he had an osteomyelitis of the right arm, surgically treated by removal of the

head of the humerus. The patient also stated that for many years he had been hard of hearing in the right ear. Following the first operation, he suffered from severe headaches, recurring every summer and radiating toward the occiput, where they produced a feeling of pressure. In the past they lasted two weeks, but because this year they lasted longer and recurred after an interval of one month, the patient asked for medical advice. The patient's condition grew rapidly worse and he died about two weeks later, twelve hours after a spinal puncture. The necropsy revealed, in the right cerebropontile angle, suppurative meningitic deposits, which also covered parts of the right cerebellar hemisphere. The cerebellum was swollen and was pressed tightly into the large occipital foramen. In the lateral portion of the cerebellum there was an abscess cavity the size of a cherry and filled with pus. The author discusses the symptomatology of cerebellar abscesses and the peculiar aspects of this case. Whether the cerebellar abscess originated in the osteomyelitis cannot be definitely decided. There is also the possibility that the two conditions had a common origin. The hypertrophic pharyngeal ring and the bad condition of the tonsils make it appear possible. At any rate, the case shows that a long time may pass between the primary infection and the manifestation of a cerebellar abscess. The second case described is that of a man with a psychopathic predisposition. Six months before his death he showed psychic changes and complained of headaches in the occipital region. An examination made two months before the fatal outcome revealed no organic symptoms, except a nystagmus toward the right side. The author emphasizes the significance of nystagmus as a sign of cerebellar abscess. The symptoms in this patient also became considerably exacerbated following a spinal puncture, and he died a few days later. The postmortem examination revealed a cerebellar abscess. The author thinks that the sudden death of both patients was the result of spinal puncture, for in both patients the cerebellum was swollen and was pressed into the occipital foramen. Under these conditions, a sudden movement may easily cause an impairment of the oblongata and result in respiratory paralysis. Consequently the author warns against spinal puncture whenever there is a possibility of cerebellar abscess.

Complication of Suppurative Mastoiditis.—Lorenzo and Delatienda reject the theory that mastoiditis is always a secondary localization of a process in the middle ear. The case reported by them showed from the beginning primary symptoms at the focus of the disease. On the basis of their clinical and anatomic observations they conclude that the disorder was a primary osteomyelitic mastoiditis with manifestations corresponding to Bezold's mastoiditis. The suppuration spread into the deeper layers of the neck and into the lateral portions of the pharynx. The osteomyelitis involved the left occipital condyle and the epistropheus and the atlas, and the intravertebral ligaments were also destroyed. An incomplete Brown-Séquard syndrome developed as the result of extradural compression of the first cervical segment. Death was caused by compression of the medulla oblongata resulting from the dislocation of the occiput and of the atlas against the epistropheus. The authors base their contention that the process was primary on the following factors: lack of a preceding disturbance of the middle ear, sudden beginning of the osteomyelitic processes, normal condition of the middle ear and a special affinity of the pathogenic organisms for bony tissue, which was exemplified by the osteomyelitic processes in the cervical spinal cord.

Reduction of Sedimentation Rate in Neurotic Persons.

—In 157 patients with functional neuroses or with psychopathy, Range observed a retardation of the sedimentation speed of the erythrocytes from 1 to 3.5 mm. per hour. Women and men were represented in this material in the ratio of 1:2. From the study of twenty-two patients the author gained the impression that the sedimentation speed of erythrocytes is largely dependent on the fibrinogen and on the changes in the plasma protein. Low sedimentation speed of the erythrocytes was always accompanied by abnormally low fibrinogen values, whereas control tests on sixteen persons with increased sedimentation speed of the erythrocytes revealed high fibrinogen values. The tests seem to indicate also that there is a relationship between sedimentation speed and increase in the globulin content. Low globulin values always were accompanied by retardation of the sedimentation, and this decrease of the globulin was always present in neurotic patients with decreased sedimentation speed.

Zeitschrift für Kinderheilkunde, Berlin

55: 1-136 (May 15) 1933

- *Results of Splenectomy in Gaucher's Disease (Familial Splenic Anemia). O. Ullrich.—p. 1.
Chemical Examination of Spleen in Gaucher's Disease. H. Mai.—p. 12.
Psychopathic Child in Light of Psychology of Primitive Peoples. H. Waller.—p. 17.
School Endemic of Erythema Nodosum. W. Göbel.—p. 30.
*Combination Therapy of Anemia in Children. G. Hantschmann.—p. 51.
Micromethod of Müller's Conglobation Reaction. V. Niederwieser.—p. 67.
Experimental Studies on Mucous Membrane Diphtheria of Animals: Specific Action of Diphtheria Serum in Bacillary Infection of Animals. F. von Bornmann and O. Scheurer.—p. 73.
Disturbances in Phosphate Metabolism in Rickets. W. Heymann.—p. 92.
*Pathogenesis of Diarrhea in Nurslings. H. Langer and I. Pipirs.—p. 101.
Serologic Investigations in Whooping Cough. W. Keller, A. Klopstock and Elisabeth Klopstock.—p. 112.
Postvaccinal Myelitis Six Months After Acute Anterior Poliomyelitis. T. Brehme.—p. 123.
Treatment of Whooping Cough with Bromine. W. Belmonte.—p. 134.

Splenectomy in Gaucher's Disease.—Ullrich shows that in patients with Gaucher's disease (familial splenic anemia) splenectomy has its advantages and its disadvantages. He reports a case in which splenectomy averted the acute danger to the child from severe anemia and hemorrhagic diathesis and improved the general condition. But soon after the operation, skeletal changes of a progressive, destructive character became manifest. Although roentgenoscopy before the splenectomy did not show involvement of the skeletal system, it is possible that the bone marrow was already involved and, if a disturbance in the lipid metabolism is the principal factor in Gaucher's disease, it becomes understandable that following extirpation of the main organ of storage, the spleen, the bone processes should become more progressive. The author concludes that since splenectomy does not influence the metabolic disturbance, which is the underlying cause of the disease, the diagnosis Gaucher's disease does not justify the intervention. The danger of diverting the storage into the skeletal system militates against splenectomy, unless the patient's life is in acute danger from severe anemia or hemorrhagic diathesis, or a huge splenic tumor makes life extremely difficult. Only in such cases will the prospects of a successful operation counterbalance the risk of osseous manifestations.

Combination Therapy of Anemia.—It is demonstrated by Hantschmann that in the university children's clinic in Königsberg the treatment of anemic children has been more successful in the last three years than was the case in the preceding years. He ascribes this to the use of a combination therapy. The milder cases were treated with iron and liver, and in severe cases blood transfusions were added. This combination therapy hastened recovery and improved the final results of the treatment. The author thinks that iron is best in the form of reduced iron and that liver should be given in the form of powder or extract. Hemotherapy is most advantageous in intravascular administration. Case reports show that the combination therapy was successfully employed in children with alimentary anemia, postinfectious anemia, Jacksch-Hayem's anemia, secondary anemia, and anemia of premature infants and of children with rickets. The author resorted to the combination therapy also in other disorders of the hematopoietic system. In lymphatic leukemia, aleukemia and myeloid leukemia, the combined application of iron, liver and blood transfusion failed, in that the improvement was only of short duration, but in a child with lymphogranulomatosis the combined application of iron and liver increased the hemoglobin content and the number of the erythrocytes, so that radiation therapy could be commenced. Of two cases of hemorrhagic purpura, one yielded to repeated blood transfusions and the other one to combined iron and liver therapy.

Diarrhea in Nurslings.—According to Langer and Pipirs, food remains in the stomach, to be separated into its constituents. The defective separation of a milk food is the essential factor in the pathogenesis of diarrhea in nurslings, for it supplies the small intestine with a chyme that furthers the growth of a pathologic flora. If the defective separation is combined with a prolongation of the retention of the food in the stomach, which is the case in a food with a high fat content, stagnation of the entire gastric contents is the result, and this

prepares the way for bacterial disintegration in the stomach. Promotion of the separation of the gastric contents should therefore be the aim of the antidyspeptic diets. The separation of the gastric content is promoted by the addition of sugar to the milk, whereas the addition of fat retards the separation and with it the evacuation of the stomach.

Zeitschrift für klinische Medizin, Berlin

124: 237-434 (May 13) 1933

- Physiology and Pathology of Metabolism of Ketone Bodies. C. Brentano.—p. 237.
*Sato's Peroxidase Reaction of Myeloid Leukocytes and Their Significance for Neurology. W. Mascher.—p. 293.
Spectrographic Studies on Pathologic Body Fluids. L. Karczag, M. Hanák and L. Szendey.—p. 310.
Acute Acid Erythrocytosis. L. Detre and A. Farkas.—p. 316.
Behavior of Diabetic Patient in Galactose Assimilation. L. Pollak and A. Selinger.—p. 321.
Addison's Disease and Amyloidosis. H. Bernhardt.—p. 343.
Changes in Blood and Spinal Fluid in Renal Insufficiency. F. Reiche.—p. 352.
Evaluation of Exogenic Creatinuria Following Intravenous Creatine Tolerance Tests. W. Wolff.—p. 370.
*Chyluria. H. Lucke.—p. 379.
*Rare Distant Complications in Gonorrhea. K. Damblé.—p. 388.
Sedimentation Reaction in Hypertension. H. B. Kirkland.—p. 398.
Paroxysmal Ventricular Tachycardia. L. Strauss and F. Becker.—p. 406.
*Significance of Hemorrhagic Diatheses in Occult Carcinomas. W. Beigböck.—p. 411.
Allergy Toward Alcaligenes Abortus and Serum Phenomena in Human Subjects. G. Straube.—p. 420.
Jejunio-Ileac Diverticula. O. Merkelbach.—p. 426.

Peroxidase Reaction of Myeloid Leukocytes.—Mascher calls attention to Sato's method of peroxidase demonstration in the leukocytes and to the phenomenon discovered by means of it; namely, a disappearance of the peroxidases of the leukocytes in neurologic disorders. Because Sato first thought processes in the corpus striatum responsible for this phenomenon, he referred to it as the "striatal blood syndrome." The author found that Sato's peroxidase reaction is superior to the formerly employed methods. The technic is simple and it is helpful in differentiating myelogenic and nonmyelogenic cells. The large monocytes always prove to be peroxidase positive in this reaction. Staining with low concentrations of hydrogen dioxide and observation of the pathologic blood pictures make it appear probable that the peroxidase content of the different granules in the cells is not the same. Since a certain minimum of ferment is necessary to produce the reaction, staining with low concentrations of hydrogen dioxide is frequently not sufficient to demonstrate the granules. The same behavior is observable in the pathologic reduction of the peroxidases in the leukocytes. In both instances, the result is a more or less pronounced reduction in the number of granules. Only this reduction in number is pathologic, and a fluctuation in the intensity of staining of the demonstrated granules has no demonstrable pathologic significance. The reduction of the peroxidases in the leukocytes which is dependent on the pathologic granulation is to be differentiated from the manifestations resembling the striatal blood syndrome. The author thinks that Sato's theory, that the striatal syndrome is caused by a focal lesion on the floor of the third ventricle, is not definitely established, for in tests on forty patients with chronic encephalitis, the typical striatal blood syndrome was not observed. In one patient there was a noticeable reduction in the peroxidase content of the myeloid leukocytes, and this could perhaps be considered as a phenomenon resembling the striatal blood syndrome.

Chyluria.—It is pointed out by Lucke that the etiology of tropical, parasitic chyluria is understood, because, owing to the anatomic impairment of the lymphatic system by the parasites, there develops a direct communication between the lymph vessels and the urinary tract. In nonparasitic chyluria, however, the pathogenesis is not so clearly understood. In the reported case the chylous urine was secreted bilaterally. The specific gravity of the urine indicated that not all constituents of the lymph were present in the urine, and it seems likely that the transfer took place in the kidney, as the unchanged lymph should have appeared in the urine in case of a direct communication between lymph channels and descending urinary passages. The author points out that the kidney itself contains lymph vessels and that the glomeruli contain lymph capillaries. However, it is unlikely that some constituents of the urine find their way directly from them to the descending urinary passages. It

appears more probable that the glomeruli pass the unchanged lymph and that certain constituents are reabsorbed in the tubules. A connection between a disturbance in the region of the glomeruli and the chyluria seems the more probable, since a functional disturbance of the kidney concurred with the chyluria and subsided simultaneously with it. By means of a fat-free diet the chyluria could be reduced to a minimum. The author does not wish to base etiologic generalizations on the study of one case, and he is inclined to believe that chyluria may be produced by various causes.

Distant Complications in Gonorrhea.—Damblié reports one case of gonorrheal sepsis with severe ulcerous endocarditis, swelling of the liver and spleen and acute diffuse glomerular nephritis. It was not possible to obtain cultures of gonococci fourteen hours after death, but they were demonstrable in the histologic preparation of the aortic valves. The second case history concerns a patient who developed meningitis following a gonorrheal reinfection. The urethral secretion contained numerous gonococci and there was a gonorrheal epididymitis on the left side. Lumbar puncture revealed a considerable increase in pressure, a marked increase in the number of cells, positive protein reactions and a negative Wassermann reaction. In spite of several examinations it was not possible to demonstrate the gonococcus or any other form of coccus in the cerebrospinal fluid. All cultures remained sterile. Antigonorrheal treatment and two spinal punctures led to recovery.

Hemorrhagic Diatheses and Carcinoma.—Beiglbock gives the histories of two patients who presented the clinical aspects of hemorrhagic diathesis, and in whom the necropsy revealed a carcinoma. The reported cases have in common the advanced age of the patients and arteriosclerotic changes, but there are also factors in which they differ. In the first patient the vessels were impaired by the carcinoma and by inflammatory processes (appendicitis, pneumonia), and this may have led to the cutaneous hemorrhages, without severe changes in the blood. In the second case, however, changes in the blood, which in turn must be traced to extensive carcinomatous metastasization in the bone marrow, were the essential factor in the pathogenesis of the hemorrhagic diathesis. The thrombopenia, detected at the first examination, increased rapidly. The author found that reports of carcinoma without metastases of the bone marrow and with hemorrhagic diathesis are rare, but that the concurrence of metastases of the bone marrow with thrombopenia and with hemorrhagic diathesis has been reported more often. He considers it advisable to search for a carcinoma whenever older patients have a hemorrhagic diathesis of unknown origin.

Zentralblatt für Chirurgie, Leipzig

60: 1217-1264 (May 27) 1933

Treatment of Difficult Bimalleolar Fracture Dislocations. H. Matti.—p. 1218.

Observations in Case of Osteochondritis of Shoulder. J. Marian.—p. 1222.

Operating in Epinephrine Anemia. M. Krabbel.—p. 1225.

*Prevention of Gas Gangrene. L. Böhler.—p. 1227.

Sympathectomy for Painful Stump. K. Reschke.—p. 1230.

Ileus in Profuse Abdominal Bleeding. R. Hubrich.—p. 1231.

Prevention of Gas Gangrene.—Among 20,000 open traumatic wounds treated by Böhler in the past seven years, there were 253 compound fractures of the long bones and more than 100 open tears of the large joints. Only one patient in this group died of gas gangrene, though gas gangrene serum was regularly omitted in the treatment. The one fatal outcome was in a patient with tearing and soiling of the calf muscles. The popliteal artery did not pulsate. In his experience, absence of the popliteal pulse in the presence of an extensive injury to the soft parts always resulted in moist gangrene. It is obvious that the use of prophylactic serum in these cases is of no avail, since the part deprived of circulation must die. The author was frequently able to demonstrate the presence of gas gangrene bacteria in wounds by the culture method without, however, the subsequent development of clinical symptoms of gangrene. Gangrene develops principally as the result of interference with the blood supply of a part. An immediate amputation of the lower extremity is indicated when, following an extensive injury to soft parts, the peripheral pulse cannot be palpated and the toes are pale and cold. When the blood supply is adequate, a careful excision of the traumatized tissues is indicated. Since this operation occupies from one to three hours, general anes-

thesia is never resorted to. After the excision, the leg is immobilized in a fenestrated plaster cast. The author considers the use of strong antiseptics injurious to the tissues and likewise objects to leaving foreign bodies in the wound. Only the most necessary ligations of arteries are performed and suture of bones or of soft parts is omitted. The author concludes that his experience in treating 20,000 patients with open traumatic wounds without the gas gangrene serum indicates the importance of the surgical rather than the serologic prophylaxis.

Klinicheskaya Meditsina, Moscow

10: 847-974 (No. 19-22) 1933. Partial Index

Ten Years of Chair of Social Hygiene. N. A. Semashko.—p. 850.
Problem of Functional Regulation of Organism. A. A. Bogomolets.—p. 853.

Incipient Signs of Chronic Rheumatism. M. P. Korchlovskiy.—p. 858.
Vaccination Against Tuberculosis. V. A. Lyubarskiy and A. F. Korzhinskaya.—p. 892.

Experimental Cancer of Gallbladder and Liver. N. N. Petrov and N. A. Krotkina.—p. 914.

*Benign Tumors of Stomach and Their Roentgenologic Diagnosis. S. A. Reinberg and E. F. Rotermel.—p. 926.

Problem of Continued Fever. M. F. Ryabov.—p. 946.

Preliminary Irradiation of Kidney in Order to Diminish Bleeding in Nephrotomy. A. M. Gagan.—p. 960.

Arterial Hypertonus and Working Capacity. P. N. Nikolaev.—p. 963.

Benign Tumors of Stomach.—From a study of eighteen cases of benign tumor of the stomach, Reinberg and Rotermel make the following deductions: 1. Roentgen studies make it possible to diagnose benign gastric tumors. 2. The clinical course of these tumors is variable. 3. Acute hemorrhages leading to high grade secondary anemia or simulating pernicious anemia are rather frequent manifestations. Every patient suffering from an anemia of unknown cause should be submitted to a roentgenologic study of the gastro-intestinal tract. 4. Benign tumors situated in the pyloric portion may cause an acute obstruction or a chronic intermittent obstruction. Pedunculated tumors not infrequently prolapse into the duodenum. 5. These tumors must be regarded as precancerous conditions, since their malignant transformation is quite common. 6. The authors recommend surgical removal of the tumors even though they cause no symptoms. They point out that roentgenologically diagnosed benign tumors of the stomach may not be palpable at the time of operation through the wall of the stomach and may therefore be overlooked unless inspection of the interior is undertaken through a gastrostomy incision.

Nordisk Medicinsk Tidskrift, Stockholm

5: 645-675 (May 27) 1933

New Problems in Physical Therapy. H. Jansen.—p. 645.

*Barbitism, New Narcomania. G. Rylander.—p. 647.

Allergic Complications in Treatment of Diabetes with Insulin. E. Jorpes.—p. 654.

Barbitism.—Rylander reviews the literature and states that poisoning due to the intake of barbituric acid derivatives as soporific substances has become prevalent in Sweden in recent years. The author adds, however, that many cases were falsely diagnosed in the past and that the treatment of addiction to drugs in general concerns a psychiatrist or neurologist more than an internist. Barbitism is often mistaken for dementia paralytica; many patients taking small amounts of the derivatives daily for a long period of time are gradually poisoned and develop these paralytic symptoms. Some authors speak of a pseudo-encephalitic type and a pseudocerebral type of barbitism. Several French authors found that small doses of barbital administered gradually in animals cause excitation, motor disturbances and spasms. The smallest lethal dose of barbital is 0.65 Gm.; the average fatal dose, 3.25 Gm. Addicts are in the majority persons with psychopathic tendencies. The characteristic symptoms of barbitism are stupor, coma, amnesia, incoordination, inability to concentrate, impaired speech and general lethargy. In more serious cases, some of the symptoms are deep coma, cyanosis, facial paralysis, incontinence of urine and feces, and low blood pressure. Diagnosis, which is often difficult, is sometimes made by the discovery of barbituric acid derivatives in the urine or stomach contents. The author presents six cases of gradual poisoning due to the constant intake of barbital, bromural and phenobarbital. The majority of the patients were high strung and emotional and improved with psychiatric treatment. The author concludes that barbitism is a true toxicomania.

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IMPORTANCE OF CLINICAL-PATHOLOGIC CONFERENCES IN WORK OF THE PRACTITIONER AS TEACHER

CHAIRMAN'S ADDRESS

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BOSTON

The Council on Medical Education and Hospitals has assembled some striking figures in its most recent report.¹ In 1932, there were 6,562 registered hospitals in the United States with a total capacity of more than 1,000,000 beds; the number of patients admitted to these hospitals during the year was 7,228,151. To carry on such a huge hospital practice, 7,757 interns and 2,018 resident physicians were employed. These 10,000 apprentices worked under the guidance of a teaching staff of 101,518 older and more experienced visiting men. On the shoulders of this visiting staff, therefore, falls the responsibility for carrying on the most important concerted effort at systematic postgraduate instruction that is being conducted in this country at the present moment.

Since more than 100,000 of the 125,000 practicing physicians in this country are directly associated or affiliated with hospitals, it follows that the vast majority of physicians who attend the annual meeting of the American Medical Association must occupy responsible hospital positions, have working under them varying numbers of interns and residents, and, therefore, are to be considered as actively engaged in the teaching of medicine. I have an impression that many practitioners are not wholly alive to their responsibilities as teachers and do not carry on such teaching of medicine as they are expected to perform, as enthusiastically and vigorously as is desirable.

The importance of clinical-pathologic correlation as a means of teaching medicine has been recognized for many years. Yet in a group of 664 hospitals which the Council investigated in 1931, from this point of view, only 86 of them (13 per cent) performed necropsies in more than one half of their fatal cases. These figures suggest that there still exists a good deal of inertia toward such an important method of instruction on the part of the hospital teaching staff. It is on the educational value of the clinical-pathologic conference that I shall dwell here.

PERMISSION TO PERFORM NECROPSIES

There are certain hospitals in this country in which for many years necropsies have been performed in nearly all fatal cases. Such hospitals, however, are usually special hospitals of one sort or another. Comparatively few institutions that offer an apprenticeship in general practice have done so well. This fact, already has received comment from time to time, and efforts have been made toward improving the situation. For example, all hospitals now desiring approval by the American Medical Association for the training of residents must examine post mortem at least 15 per cent of their fatal cases. This ruling is a logical one, stressing as it does adequate training in pathology as an important qualification for a good residency, and the belief that on the whole the percentage of necropsies obtained in any hospital forms a very good index of the professional efficiency of the institution.

There are various methods that can be employed to obtain permission to make pathologic examinations in an increasing number of cases: public education is one of the most important. People must learn what a post-mortem examination is and why it is important. Articles for the layman, such as the one called "I want a Postmortem Examination Made When I Die," by Dr. Emil Bogen,² or the one by Dr. Oscar T. Schultz,³ "Tales That Dead Men Tell," have played an important part in public education of this character. Since physicians must set the pace in matters of this sort, the example of a man like Dr. W. S. Thayer is most inspiring. In the *Boston Herald* for December 15, 1932, there appeared an Associated Press article under the caption "Dr. Thayer Wills Body to Science." This article quoted Dr. Thayer's will as beginning:

I direct that on my death a necropsy be performed upon my body for the purpose of scientific study at the earliest possible moment after my death, preferably by my dear friend William G. MacCallum.

I should like especially to have the condition of my coronary arteries and heart muscle carefully explored.

Especially do I desire that my friend Dr. Adolph Meyer may, if he desires, have every opportunity to study my brain. The interest which may attach to this lies in the circumstance that I have had for about fourteen years, since a resection of my nasal septum, a complete anosmia.

After a complete necropsy, after which any parts of my body which may be useful may be preserved, I direct that the remains be cremated and the ashes buried at Sleepy Hollow graveyard at Concord, Mass.

Such an example is bound to affect the public mind. I hope many physicians will follow it.

From the Medical Clinic of the Peter Bent Brigham Hospital.
Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Hospital Service in the United States, J. A. M. A. 100:887 (March 25) 1933.

2. Bogen, Emil: When I Die, *Hygeia* 4: 696 (Dec.) 1926.

3. Schultz, O. T.: Tales that Dead Men Tell, *Hygeia* 7: 1201-1204 (Dec.) 1929.

Cooperation with undertakers and funeral directors, too, is an important step in increasing a hospital's autopsy percentage. Ten years ago, Krumbhaar⁴ described the necessity for such cooperation and showed how, in the Philadelphia General Hospital, by this and other steps, the necropsy percentages were increased rapidly from 10 to over 50. In 1925, the New England Hospital Association listened to a very stimulating address on "Requirements for Cooperation Between Hospitals and Funeral Directors" by Mr. Arthur H. Chandler,⁵ president of the Massachusetts Funeral Directors' Association, and, as judged by the ensuing discussion, this paper had a far-reaching effect on the hospitals in New England.

Fundamentally, however, the necropsy percentages of any hospital depend on the staff. For ten years I have had the privilege of being associated with the Peter Bent Brigham Hospital in Boston. During this decade our pathologists have examined 66 per cent of all patients dying in the hospital. This is one of the few general hospitals in the country with such a record for accomplishment of thorough work. It is not amiss, therefore, to describe how the record is maintained.

What Dr. Harvey Cushing⁶ has termed "the personality of a hospital" has much to do with the activities of the pathologic laboratory. Since the Peter Bent Brigham Hospital opened, it has been the tradition for the resident, visiting and nursing staff to treat each patient as though he or she owned the place. We have put ourselves out to make our guests feel at home, to become well acquainted with them and with their friends and relatives, to be sympathetic with their idiosyncrasies and to understand thoroughly not only their diseases but also—and sometimes this is much more important—their social, economic and psychologic problems.

It also has become a tradition with us to explain to patients and their relatives the necessity for whatever procedure is indicated; to tell them what we hope to accomplish by treatment and to be as patient as possible with those who are distraught or prone to misunderstand. This is carried out by frequent interviews with the patients in the wards. Each day, too, after ward rounds, the senior house officers assemble at the front of the hospital to talk to the friends and relatives of the patients. Here all questions are answered and the personal relationship is established that exists between a practicing physician and the families of his patients. And, finally, if treatment has failed and death has occurred, the senior house officer in charge of the ward in which the fatality has taken place asks the nearest relative or friend for permission to carry on a pathologic examination. He, as a well educated physician should, tells the friends or relatives of deceased patients what has happened and why further examination is important; and he assures them that such an examination is not in the least disfiguring but merely a necessary operation to make sure that everything possible in treatment has been done. In the majority of cases, as our records show, no great objection is encountered.

The examination is conducted expertly and with the same regard for technic and care that is displayed by all good surgeons. A careful record of the observations is made, and, at last, a letter describing the sig-

nificance of the observations in regard to the individual case is sent with a word of condolence to the patient's relatives and family physician.

This general course of procedure in completing the final study of our cases has been effectual for so many years and in the hands of so many different interns that I am fully convinced of its efficacy. An intern who treats his patients and their relatives considerately and well can generally, forever after, get them to do anything he wishes.

THE CABOT CLINIC

Just as it is important for members of the hospital staff who are engaged in training interns to encourage a complete and careful clinical study of each case, so is it equally important for them to make sure that the pathologic material of the hospital is used to best advantage for educational purposes. This can be accomplished in various ways.

More than twenty-five years ago Dr. Richard Cabot introduced in the Harvard Medical School an interesting and popular teaching exercise which he still maintains. Every other week he comes to the Peter Bent Brigham Hospital and meets in the amphitheater a group of students and staff. He is given an abstracted case record of a certain patient whom he has never seen and of whose case he knows nothing. He reads the record aloud, comments as he sees fit on the history and the physical and laboratory examinations, inspects such roentgenograms as he wishes to look at, reads the "follow-up" notes and finally makes a diagnosis. He explains why he arrives at his diagnosis in this particular case, discusses, on the way, differential diagnosis, the physical signs or laboratory data which are essential or misleading, and the significance, in his experience, of this or that point. Having made a diagnosis, he asks the pathologist for the actual observations. These are given in detail and are often accompanied by gross and microscopic demonstrations. Thus, the correctness of Dr. Cabot's diagnosis is established or refuted beyond peradventure. Dr. Cabot aims to make diagnoses that are unequivocal and definite, and he never hedges; he makes an earnest attempt to correlate clinical and pathologic observations to improve not only his own diagnostic acumen but also that of his audience.

I have always found this exercise most stimulating. It has been fitted to hospitals elsewhere, as Dr. Steinberg⁷ of Toledo has shown, but its success, in Boston at least, depends on Dr. Cabot's personality. To carry on the exercise properly, the clinician should be pungent and witty, have a positive way of stating things, should know nothing about the case before the time of discussion, and should be entirely fearless and unashamed to be found wrong by a keen pathologist.

THE MAYO CLINIC STAFF CONFERENCE

When I was working in Rochester, Minn., the clinical-pathologic staff conferences of the Mayo Clinic were equally valuable and interesting. The staff met each Wednesday evening and each member was supplied with a typewritten summary of all fatal cases of the previous week. A very short abstract of each case was given with a note on the diagnosis, treatment and pathologic observations. Each case was then discussed in detail by the pathologist and the importance of the various pathologic observations was described. The

4. Krumbhaar, E. B.: *The Need for Postmortem Examinations and Method of Securing Them*, J. A. M. A. 80: 1682-1683 (June 9) 1923.

5. Chandler, A. H.: *Requirements for Cooperation Between Hospitals and Funeral Directors*, Boston M. & S. J. 194: 728-732 (April 22) 1926.

6. Cushing, Harvey: *Consecratio Medici*, Boston, Little, Brown & Co., 1928, p. 276.

7. Steinberg, Bernhard: *Autopsies and the Hospital Staff Conference*, Proc. Ann. Cong. M. Educ., 1929, pp. 1-6.

pathologic interest of the cases was not so much stressed, however, as was the possibility of devising new methods of diagnosis or treatment to prevent the future occurrence of similar cases. Thus, for example, in that particular period of time an undue number of patients with thyroid disease and with jaundice appeared to be doing badly. As a result, Dr. Henry Plummer before long introduced the use of compound solution of iodine (Lugol's solution), and the thyroid fatalities disappeared, and Dr. Waltman Walters began studying blood coagulation and liver function experimentally and in jaundiced patients, with the result that methods were soon developed by which cases of this type were prepared scientifically for operation and rendered good instead of poor surgical risks.

This experience in the Mayo Clinic has made a deep impression on my mind, demonstrating as it does the possibilities of team play in the advancement of medical knowledge. I have often thought that large hospitals, especially large municipal hospitals with a quick "turn-over," might do well to establish similar conferences for the visiting and resident staffs. It is very important to know the type of case that is being admitted to such a hospital at any given season of the year, whether in general disease is severe or mild, which type of disease produces the fatalities that occur and what are the major problems. This information can be obtained and made generally available only by staff conferences of the Mayo Clinic type. If such conferences are attempted, however, the spirit of self-sacrificing team play must be fostered. The staff conferences must be well attended. There must be no backbiting nor unfair criticism. Every one must make an honest effort to improve the work of the hospital, concentrating material for investigation, when necessary, and giving those with a bent for clinical investigation all possible opportunity, support and encouragement.

THE PETER BENT BRIGHAM HOSPITAL CONFERENCES

Still another valuable method for making use of the pathologic material is employed at the Peter Bent Brigham Hospital. One day a week for an hour there is an x-ray conference at which the roentgenologist demonstrates the particularly interesting films of the week. A brief history of each case is given and the roentgen observations are correlated with the clinical examinations. Cases that have been examined by the pathologic department are utilized to particular advantage; gross and microscopic appearances are compared with those of the roentgenogram, and the advancement of any disease is traced as clearly as possible by serial films. Finally, there is an exhibition of tissues that have been removed by the surgeons, or of abnormalities discovered at necropsy by the pathologists. This is a very important exercise. It is attended by the entire staff and links together firmly the combined activities of the clinical, radiologic and pathologic staffs of the hospital.

One day a week, too, we have a more formal clinical-pathologic conference. Here, completely studied cases are discussed. Case histories and clinical examinations are compared with pathologic observations, and the life history of disease in a given case is described from beginning to end. The exercise is a popular one, well liked by students and staff. I know of no better method of teaching applied pathology to a group of clinically minded interns and students.

PUBLISHED CASE REPORTS

Finally, the hospital teaching staff must remember that one of its important duties is to train men to write medical papers properly. Professor Christian, with us, has always made it a point to encourage each one of his interns to carry out some piece of original work as part of his training. Since interesting cases worthy of record are constantly under observation and followed up, many interns add to the literature by reporting one or more of the carefully and completely studied cases that have been observed. In writing such a paper, the intern learns how to assemble literature and thus how to use a library; how to compile a bibliography, and, most important of all, the fact that medical writing is difficult and laborious. Such an experience is a valuable feature of effective intern training and, if carried on elsewhere, will do much to help American medical literature. For several years, the Alleghany County Medical Society of Pennsylvania⁸ has tried an interesting experiment along this line. Each year the society offers a prize of \$50 for the best case report submitted by interns of any approved hospital in the county. In judging the material submitted, brevity, general interest of the case, completeness of detail and literary style of the composition each receive due consideration. No doubt, the possibility of winning such a prize improves the work of the interns of the hospitals in Alleghany County to a perceptible degree.

These, in brief, are some of the ways in which the pathologic work of hospitals in which interns are trained can be utilized for teaching purposes. No doubt there are many other ways, equally valuable, to accomplish this purpose. Each institution must develop the method best suited to itself. To make such teaching of greatest value, however, enthusiasm on the part of the teaching staff is essential. A great deal can be accomplished to improve the scheme of graduate-teaching in hospitals approved for interns if each practitioner who is on such a hospital staff remembers Dr. Cushing's advice:

Example has much to do with the perpetuation of tradition, especially where there is a succession of hero-worshipping and imitative juniors; and if a hospital's personality is, as I believe it to be, its chief asset, the thought should quicken the sense of responsibility of everyone. He who is willing to do something more than follow a prescribed routine and who merges himself most with the active indoor life of the institution, giving even at personal sacrifice the most time to the attainment of this end, is certain to be the best and longest remembered.

721 Huntington Avenue.

8. Alleghany County Medical Society: Rules Case Report Contest, 1932.

Agnesis of the Corpus Callosum.—Since 1812, eighty-two cases of agnesis of the corpus callosum have been reported, in fifty-one (62 per cent) of which it was complete and in thirty-one (38 per cent) partial. Agnesis of the corpus callosum is usually associated with other anomalies of the brain, such as polygyria, embryonic arrangement of sulci, absence of olfactory nerves and partial separation of the frontal lobes. The age of distribution of agnesis ranges from birth to 73 years of age, the majority of patients being in the first decade of life. The mentality of the patients varies from idiocy to mediocre intelligence, corresponding somewhat with the associated anomalies of the brain. The etiology of this condition is unknown, although many speculations have been suggested.—Barker, R. C., and Graves, G. O.: Partial Agnesis of the Corpus Callosum, *Arch. Neurol. & Psychiat.* 29:1054 (May) 1933.

THE RÔLE OF DIIODOTYROSINE IN HYPERTHYROIDISM

A COMPARISON OF THE THERAPEUTIC EFFECT OF
DIIODOTYROSINE WITH INORGANIC IODINE

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NEW YORK

In a number of publications which appeared recently,¹ particularly in the German literature, it was reported that the administration of diiodotyrosine to patients with hyperthyroidism causes a striking amelioration of symptoms and a sharp fall in the basal metabolic

need of thyroidectomy could be obviated in less severe cases.¹¹ These authors regard diiodotyrosine as the medication of choice in the management of hyperthyroidism. However, although a controlled comparison of the effects of diiodotyrosine with the response to more commonly used iodine compounds would seem to be indicated by the therapeutic importance and theoretical interest of these observations, no such study has been made, so far as we know. A record of our experience with diiodotyrosine in the preoperative management of patients with hyperthyroidism as compared with our results with compound solution of iodine and sodium iodide may therefore be of interest.

The therapeutic effect of diiodotyrosine is also of more general interest, since diiodotyrosine is now known to be one of the constituent amino-acids of thyroglobulin.² Its significance in the economy of the thyroid gland, particularly in the development of hyper-

TABLE 1.—Effects of Administration of Diiodotyrosine to Hyperthyroid Patients

| Case | Age | Sex* | Admission Basal Metabolic Rate Above Normal | Days of Bed Rest | Basal Metabolic Rate | | | Clinical Response to Diiodotyrosine | Iodine Content Dry Gland | | | | | |
|-------------------------------------|-----|------|---|------------------|--------------------------|--------------------------|---------------------------|-------------------------------------|--------------------------|---------------------|--------------------------|--|------|------------------------------------|
| | | | | | After Rest Before Diiodo | After One Week of Diiodo | After Two Weeks of Diiodo | | Total, per Cent | Thyroxine, per Cent | Ultrafiltrable, per Cent | Percentage Ultrafiltrable, Precipitated with Silver Sulphate | | Thyroxine I Thyroglobulin per Cent |
| | | | | | | | | | | | | | | |
| Diffuse Goiter with Hyperthyroidism | | | | | | | | | | | | | | |
| 1 | 45 | ♀ | 105 | 4 | 78 | 54 | 53 | Satisfactory | 0.281 | 0.055 | 0.042 | 79 | 23.0 | |
| 2 | 44 | ♀ | 81 | 5 | .. | 53 | 38† | Satisfactory | 0.116 | 0.0084 | 0.039 | 74 | 10.9 | |
| 3 | 43 | ♀ | 80 | 3 | 67 | 37 | 46 | Satisfactory | 0.201 | 0.039 | 0.033 | 67 | 23.2 | |
| 4 | 25 | ♀ | 78 | 4 | 75 | 32 | 22 | Very good | 0.134 | 0.0076 | 0.045 | 89 | 8.5 | |
| 5 | 30 | ♀ | 74 | 3 | 63 | 39 | 39 | Satisfactory | 0.293 | 0.055 | 0.034 | 82 | 21.2 | |
| 6 | 26 | ♀ | 70 | 5 | 60 | 47 | 51 | Satisfactory | 0.171 | 0.026 | 0.043 | 56 | 20.3 | |
| 7 | 24 | ♀ | 66 | 10 | 43 | 29 | 21 | Very good | 0.293 | 0.069 | 0.024 | 42 | 25.6 | |
| 8 | 19 | ♀ | 64 | 3 | 59 | 36 | 29 | Satisfactory | 0.214 | 0.037 | 0.031 | 68 | 20.2 | |
| 9 | 26 | ♀ | 64 | 4 | .. | 25 | 25 | Satisfactory | 0.254 | 0.069 | 0.017 | 53 | 29.1 | |
| 10 | 40 | ♀ | 61 | 6 | 45 | 32 | 26 | Satisfactory | 0.234 | 0.059 | 0.019 | 47 | 27.5 | |
| 11 | 43 | ♀ | 60 | 3 | 44 | .. | 28† | Satisfactory | 0.182 | 0.012 | 0.046 | 89 | 11.3 | |
| 12 | 52 | ♀ | 59 | 3 | 76 | 42 | 35 | Satisfactory | 0.112 | 0.011 | 0.032 | 75 | 13.7 | |
| 13 | 26 | ♀ | 55 | 4 | 40 | .. | 28 | Satisfactory | 0.094 | 0.018 | 0.011 | 73 | 21.7 | |
| 14 | 21 | ♀ | 51 | 4 | 55 | 30 | 27 | Satisfactory | 0.268 | 0.059 | 0.023 | 57 | 24.1 | |
| 15 | 34 | ♀ | 50 | 4 | 53 | 37 | .. | Fair | 0.087 | 0.0043 | 0.045 | 77 | 10.2 | |
| 16 | 41 | ♀ | 48 | 5 | 49 | 34 | 35 | Satisfactory | 0.152 | 0.026 | 0.037 | 57 | 22.6 | |
| 17 | 30 | ♀ | 47 | 2 | .. | 40 | 39 | Fair | 0.494 | 0.132 | 0.013 | 54 | 27.4 | |
| 18 | 27 | ♀ | 47 | 3 | 27 | 9 | .. | Fair | 0.078 | 0.010 | 0.016 | 56 | 16.1 | |
| 19 | 36 | ♀ | 41 | 4 | 32 | 16 | 11 | Very good | 0.132 | 0.024 | 0.023 | 50 | 21.8 | |
| 20 | 26 | ♀ | 38 | 5 | 44 | 23 | 11 | Very good | 0.454 | 0.103 | 0.030 | 67 | 24.3 | |
| 21 | 43 | ♀ | 36 | 3 | 32 | .. | 31† | None | 0.001 | 0.0024 | 0.023 | 57 | 6.3 | |
| 22 | 33 | ♀ | 27 | 4 | 39 | 36 | .. | Satisfactory | 0.379 | 0.053 | 0.030 | 72 | 23.8 | |
| 23 | 17 | ♀ | .. | 3 | 83 | .. | 47‡ | See text | 0.319 | 0.051 | 0.040 | .. | 18.3 | |
| 24 | 38 | ♀ | .. | .. | 46 | .. | 48† | See text | 0.253 | 0.028 | 0.064 | 80 | 14.8 | |
| 25 | 62 | ♀ | .. | .. | 28 | .. | 32† | See text | 0.212 | 0.046 | 0.020 | 65 | 24.0 | |
| Nodular Goiter with Hyperthyroidism | | | | | | | | | | | | | | |
| 26 | 50 | ♀ | 58 | 4 | 42 | 32 | 29 | Satisfactory | 0.254 | 0.060 | 0.013 | 73 | 15.8 | |
| 27 | 49 | ♀ | 47 | 4 | 30 | 22 | 11 | Fair | 0.087 | 0.012 | 0.013 | 50 | 21.5 | |
| 28 | 44 | ♀ | 46 | 2 | .. | 25 | .. | Satisfactory | 0.245 | 0.030 | 0.012 | 59 | 23.5 | |
| 29 | 57 | ♀ | 42 | 10 | 19 | 21 | .. | None | 0.134 | 0.026 | 0.016 | 39 | .. | |
| 30 | 49 | ♀ | 36 | 4 | 22 | 11 | 3 | Satisfactory | .. | .. | .. | .. | .. | |

* Male, ♂; female, ♀.

† After ten days.

‡ After twelve days.

§ After one month.

rate. The response to diiodotyrosine was found to be more marked than that expected with compound solution of iodine (Lugol's solution) and is believed to be not an iodine effect but a specific diiodotyrosine response *sui generis*. Remission was obtained with diiodotyrosine in cases refractory to iodides,^{1e} and the

thyroidism, has long been a matter of conjecture. Harington and Barger³ regarded diiodotyrosine as an intermediate in the synthesis of thyroxine, formed, probably, "by the coupling of two molecules of diiodotyrosine with the loss of one side chain." Although never verified experimentally, this suggestion has been widely accepted as a reasonable working hypothesis. A more significant rôle has been ascribed to diiodotyrosine recently by Abelin,⁴ who suggests that the physiologic activity of the thyroid hormone is the resultant of the antagonistic effects of thyroxine and diiodotyrosine, normally in equilibrium. This balance is destroyed in

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1. (a) Harington, C. R., and Barger, G.: Die Behandlung des Morbus Basedowii mit Diiodotyrosin. *M. D. W. Wehnschr.* 78: 1386 (Aug. 14) 1931. (b) Harington, C. R., and Barger, G.: Ueber die Wirkung von Diiodotyrosin bei der Behandlung des Basedow. *Klin. Wehnschr.* 11: 673 (April 16) 1932. (c) Parhon, C. I., and Ballif, L.: Syndrome basedowien évoluant vers le myxoedème à la suite du traitement par la diiodotyrosine. *Bull. et mém. Soc. méd. d. hôp. de Paris* 56: 601 (May 9) 1932. (d) Schittenhelm, A.: Schilddrüsenproblem und Jodstoffwechsel. *Deutsche med. Wehnschr.* 58: 803 (May 20) 1932. (e) del Castillo, E. B., and Dassen, Rodolfo: Tratamiento del hipertiroidismo por la diiodotyrosina. *Semana méd.* 2: 335 (Aug. 4) 1932. (f) Snapper, I.: Over de Behandeling van Basedowpatienten met Diiodotyrosine. *Geneesk. gids.* 10: 957 (Sept. 30) 1932. (g) Steinitz, E., and Thau, E.: Ueber die Wirkung von Diiodotyrosin bei der Behandlung des Morbus Basedow. *Deutsche med. Wehnschr.* 58: 82 (May 20) 1932. (h) Abelin, L.: Einfluss des Diiodotyrosins auf den hyperthyreotischen Stoffwechsel. *Biochem. Ztschr.* 233: 483, 1931; Probleme der Schilddrüsenphysiologie. *Klin. Wehnschr.* 10: 2201 (Nov. 28) 1931.

2. Harington, C. R., and Randall, S. S.: Isolation of d-1, 5-Diiodotyrosine. *J. Soc. Chem. Ind.* 48: 296 (March) 1929. Foster, G. L.: Isolation of 3, 5-Diiodotyrosine from the Thyroid. *J. Biol. Chem.* 83: 345 (Aug.) 1929; Isolation of d-1, 5-Diiodotyrosine from the Thyroid Gland by the Action of Proteolytic Enzymes. *Biochem. J.* 25: 1032, 1931.

3. Harington, C. R., and Barger, G.: Constitution and Synthesis of Thyroxine. *Biochem. J.* 21: 169, 1927.

4. Abelin, L.: Einfluss des Diiodotyrosins auf den hyperthyreotischen Stoffwechsel. *Biochem. Ztschr.* 233: 483, 1931; Probleme der Schilddrüsenphysiologie. *Klin. Wehnschr.* 10: 2201 (Nov. 28) 1931.

pathologic states of the thyroid gland; hyperthyroidism being associated with a preponderance of thyroxine, myxedema with an excess of diiodotyrosine. The favorable influence of diiodotyrosine in hyperthyroidism is therefore regarded as the result of the restoration of normal equilibrium between thyroxine and diiodotyrosine in the diiodotyrosine-deficient gland.⁵ The evidence for this view is based on the following observations: 1. The decrease in liver glycogen caused by feeding thyroid to rats is less marked if diiodotyrosine is given simultaneously in appropriate doses.⁴ 2. The elevation of the basal metabolic rate caused by feeding thyroid to rats is decreased by added diiodotyrosine.⁴ Iodides are ineffective.⁶

The studies reported here were made on a group of thirty unselected bed patients who showed definite clinical and metabolic evidence of hyperthyroidism. The results are summarized in table 1. In five cases the

cal evaluation according to the severity of symptoms and signs. In all but six cases there was a gain in weight during the first week of medication averaging about 2 pounds (900 Gm.) per patient. The largest gain was 6 pounds (2,700 Gm.). The average gain in weight during the second week was slightly less. The basal pulse rate showed a definite and satisfactory drop in all but six cases, in which the initial basal pulse rate was low and remained essentially unchanged. In two cases a slight rash appeared. As not infrequently observed with compound solution of iodine and sodium iodide, the clinical improvement of some patients seemed more satisfactory than the basal metabolic determination would indicate, particularly during the second week of treatment.

The postoperative course of these patients did not differ notably from those prepared for operation with inorganic iodine. A routine histologic examination

TABLE 2.—A Comparison of the Distribution of the Fall in the Basal Metabolic Rate in 185 Cases of Hyperthyroidism in Which Compound Solution of Iodine or Sodium Iodide (A) Was Given, with the Reduction in Basal Metabolic Rate in 30 Cases of Hyperthyroidism in Which Diiodotyrosine (B) Was Given

| B. M. R. After Rest, Before Medication Above Normal | No. of Cases | Basal Metabolic Rate After Medication | | | | | | | | | | Average Fall in B. M. R., Points | |
|---|--------------|---------------------------------------|---------------|----------------|---------------|---------|---------|---------|--------|-------|--------|----------------------------------|----------|
| | | Below 0 | 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | Series A | Series B |
| 15-19 | A..... 3 | 3 (100%) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 | |
| | B..... 1 | ..... | ..... | ..... 1 (100%) | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  | -2 |
| 20-29 | A..... 19 | 2 (11%) | 2 (11%) | 5 (26%) | 8 (42%) | 2 (11%) | ..... | ..... | ..... | ..... | ..... | 9 | |
| | B..... 3 | 1 (33%) | 1 (33%) | 1 (33%) | 1 (33%) | ..... | ..... | ..... | ..... | ..... | ..... |  | 8 |
| 30-39 | A..... 38 | 1 (3%) | 8 (21%) | 12 (32%) | 13 (34%) | 4 (11%) | ..... | ..... | ..... | ..... | ..... | 18 | |
| | B..... 4 | ..... | ..... 1 (25%) | 1 (25%) | 2 (50%) | ..... | ..... | ..... | ..... | ..... | ..... |  | 6 |
| 40-49 | A..... 39 | 1 (3%) | 1 (3%) | 14 (36%) | 13 (33%) | 7 (18%) | 2 (5%) | ..... | 1 (3%) | ..... | ..... | 20 | |
| | B..... 10 | ..... | ..... 1 (10%) | 5 (50%) | 3 (30%) | 1 (10%) | ..... | ..... | ..... | ..... | ..... |  | 15 |
| 50-59 | A..... 32 | 5 (16%) | 5 (16%) | 11 (34%) | 7 (22%) | 3 (9%) | ..... | ..... | ..... | ..... | 1 (3%) | 27 | |
| | B..... 3 | ..... | ..... | 2 (67%) | 1 (32%) | ..... | ..... | ..... | ..... | ..... | ..... |  | 25 |
| 60-69 | A..... 26 | ..... | 2 (8%) | 4 (15%) | 9 (35%) | 6 (23%) | 3 (12%) | 2 (8%) | ..... | ..... | ..... | 26 | |
| | B..... 4 | ..... | ..... | 1 (25%) | 1 (25%) | 1 (25%) | 1 (25%) | ..... | ..... | ..... | ..... |  | 23 |
| 70-79 | A..... 17 | ..... | ..... 2 (12%) | 6 (35%) | 2 (12%) | 5 (29%) | 1 (6%) | 1 (6%) | ..... | ..... | ..... | 38 | |
| | B..... 3 | ..... | ..... | 1 (33%) | 1 (33%) | ..... | 1 (33%) | ..... | ..... | ..... | ..... |  | 35 |
| 80-89 | A..... 7 | ..... | ..... | ..... | ..... 1 (14%) | 3 (43%) | 1 (14%) | 2 (29%) | ..... | ..... | ..... | 35 | |
| | B..... 2 | ..... | ..... | ..... | ..... 1 (50%) | 1 (50%) | ..... | ..... | ..... | ..... | ..... |  | 40 |
| 90-99 | A..... 4 | ..... | ..... | ..... 2 (50%) | ..... | ..... | ..... | 2 (50%) | ..... | ..... | ..... | 53 | |

thyroid gland was nodular; in the remainder, diffusely enlarged. With three exceptions, to be discussed later, none of the patients had received iodine prior to admission. A careful clinical estimation of the hyperthyroid state was made and the basal metabolic rate determined on admission and again after two or more days of bed rest with phenobarbital as the only medication. The administration of diiodotyrosine was then begun, the usual dose being 100 mg. a day (containing approximately as much iodine as in 0.5 cc. of compound solution of iodine). A clinical and metabolic check-up was again made after one and two weeks of medication. Partial thyroidectomy was performed shortly thereafter, and portions of the resected gland were examined histologically and chemically. The clinical impression of the response to diiodotyrosine was checked by a numeri-

cal evaluation according to the severity of symptoms and signs. The changes being those associated with iodine-treated hyperthyroid glands:^{1b} hyperplasia, cuboidal and columnar acinous epithelial cells, focal collections of lymphocytes and accumulation of colloid, which frequently showed vacuolization.

The response to diiodotyrosine of three cases previously treated with inorganic iodine is of particular interest with respect to the specificity of the diiodotyrosine effect. In each instance, the response to iodides and to diiodotyrosine seemed to be very similar:

CASE 23.—An American girl, aged 17 years, presenting a classic picture of exophthalmic goiter, had been treated with inorganic iodine for two weeks relatively early in the course of the disease and gave a clear history of improvement. About six months later she was admitted to the hospital following an exacerbation of symptoms with a basal metabolic rate of +35, which dropped to +9 in seven days. Operation was postponed, but she was given compound solution of iodine in intermittent

5. Kommerell,¹ Steinitz and Thau,¹ Zimmerman.¹
6. Carson, D. A., and Dock, W.: The Effect of Iodine on Experimental Hyperthyroidism in Man, *Am. J. M. Sc.* 176:701 (Nov.) 1928.

doses and her progress followed in the clinic. The response was fair at first, but the symptoms became more severe about ten months later. At that time diiodotyrosine was given and for a period of about two and a half months there was definite improvement, the basal metabolic rate dropping from $+58$ to $+29$. Then, as previously on inorganic iodine, unmistakable signs of "escape" began to develop, the basal metabolic rate mounting to $+61$ in less than a month. Diiodotyrosine was discontinued at that point, the basal metabolic rate thereafter mounting further to $+83$. Diiodotyrosine was then given preparatory to operation, the basal metabolic rate dropping to $+45$.

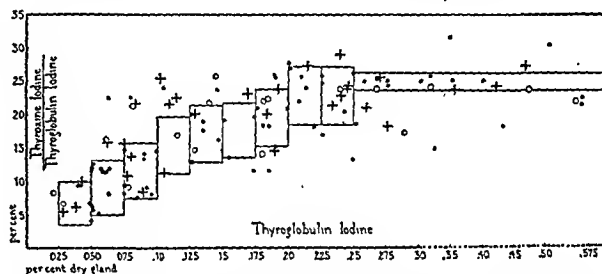
CASE 24.—A Negro woman, aged 38, had been similarly treated with inorganic iodine relatively early in the disease, with a good effect at first for about two months. Signs of "escape" then began to develop. She was admitted to the hospital with a basal metabolic rate of $+53$ and obviously very toxic. She had not received iodine for two weeks at the time of admission. After a third week without iodine, compound solution of iodine was given for nine days, the basal metabolic rate changing very little ($+46$). Clinically, she appeared somewhat improved. Diiodotyrosine was then started and continued for twelve days, after which the basal metabolic rate was $+48$ and there was no obvious improvement in her condition. She was still in a very toxic state at the time a partial hemithyroidectomy was performed and died two days after operation with all the signs and symptoms of severe acute thyrotoxicosis.

CASE 25.—An American housewife, aged 62, presented all the stigmas of exophthalmic goiter of moderate severity with a moderately large gland but with a basal metabolic rate of only $+21$ on admission to the hospital. She was given sodium iodide for ten days without clinical improvement and the basal metabolic rate was then found to be $+28$. Diiodotyrosine was administered for ten days, at the end of which time the rate was $+32$, with no definite clinical improvement.

In confirmation of the earlier reports,¹ our results indicate that administration of diiodotyrosine to patients with hyperthyroidism usually results in clinical remission and a fall in the basal metabolic rate. While the response was often very satisfactory, it was our general clinical impression that remission was not more striking than that noted after compound solution of iodine or sodium iodide. This impression was fortified by the results of a comparison of the fall in basal metabolism after diiodotyrosine in this series with that obtained with compound solution of iodine or sodium iodide in 185 unselected bed patients showing definite clinical and metabolic evidence of hyperthyroidism (table 2). In thirty-five of these cases, the thyroid gland was nodular; in the remainder, diffusely enlarged. Forty-five patients received sodium iodide before operation (usually 0.1 Gm. daily), while the remainder received compound solution of iodine (usually 1 cc. daily), the response to the two medications being essentially the same in this series.⁷ The patients are grouped according to the level of the basal metabolic rate as determined not earlier than the third day of hospitalization, before iodine medication was begun. The response indicated was obtained after from seven to fourteen (average ten) days of treatment with iodine, with eighteen exceptions. The average fall in the basal metabolic rate in the several groups corresponds in general with the careful studies reported by clinics as widely separated geographically as Boston,⁸ Chicago,⁹

Baltimore,¹⁰ Vienna¹¹ and Breslau.¹² Comparison of these results with the decrease in the basal metabolic rate following administration of diiodotyrosine (as shown in table 1, and the articles cited in footnote 1) does not warrant the conclusion that the response to diiodotyrosine is more marked than might have been anticipated with compound solution of iodine or sodium iodide.

The resected thyroid glands of our patients prepared with diiodotyrosine were analyzed for total iodine by a slightly modified Kendall method¹³ and for thyroxine iodine by the method of Leland and Foster.¹⁴ The results in this series (table 1) fall within the wide range of variation previously observed in a larger group in which compound solution of iodine had been used before operation.¹⁵ This obtains also for the thyroxine iodine per cent of thyroglobulin iodine, as indicated in the accompanying chart. Analysis of 120 thyroid glands of patients with hyperthyroidism, including many severe cases, has not provided us with any instance in which hyperthyroidism was associated with an increased thyroxine iodine percentage of thyroglobulin iodine definitely above the normal maximum.¹⁶ On the contrary, all the available chemical data¹⁷ point to a decrease in thyroxine iodine percentage of thyroglobulin iodine in hyperthyroidism. The mean thyroxine iodine per-



Scatter diagram to show the relationship between increasing thyroglobulin iodine percentage and the ratio of thyroxine iodine to thyroglobulin iodine in seventy-two diffuse and eighteen nodular hyperthyroid glands from patients given inorganic iodine; and twenty-five diffuse and five nodular glands after diiodotyrosine. The major trend is indicated by lines drawn to include the areas containing the majority of points. The solid dots represent patients with toxic diffuse goiters given compound solution of iodine; hollow dots, patients with toxic nodular goiters given compound solution of iodine; plus signs, patients with toxic goiters given diiodotyrosine.

centage of thyroglobulin iodine in thirty-eight hyperthyroid glands containing less than 0.1 per cent of total iodine in the dry gland was found to be 11.4. A similar decrease was also observed in degenerated nontoxic nodular glands.¹⁵ The cause of the decrease in thyroxine iodine percentage of thyroglobulin iodine is not known. It has been suggested¹⁵ that too rapid discharge of thyroid hormone into the circulating fluid in hyperthyroidism, or a deficiency of some essential agent in degenerated nontoxic glands might play a part in the inadequate formation of thyroxine from intermediate

10. Winkenwerder, W. L., and McEachern, Donald: The Use of Radioactive Iodine in the Treatment of Hyperthyroidism, *Bull. Johns Hopkins Hosp.*, 1932, 1:1.

Windholz, F.: Klinische und morphologische Untersuchung der antenatalen und postoperative Jod-Deutsche Ztschr. f. Chir., 207: 111.

12. Rahm, H., and Haas, M.: Prä- und postoperative Behandlung beim Morbus Basedow, *Beitr. z. klin. Chir.*, 1932, 11:1.

13. Foster, G. L., and Gutman, A. B.: On the Determination of Iodine in the Animal Organism, *J. Biol. Chem.*, 87: 193 (1932).

14. Leland, J. P., and Foster, G. L.: A Method for the Determination of Thyroxine in the Thyroid, *J. Biol. Chem.*, 95: 165 (Feb.) 1932.

15. Gutman, A. B.; Benedict, E. M.; Baxter, B., and Palmer, W. W.: The Effect of Administration of Iodine on the Total Iodine, Inorganic Iodine, and Thyroxine Content of the Pathological Thyroid Gland, *J. Biol. Chem.*, 97: 303 (July) 1932; *Tr. Am. A. Study Goiter*, 1932, p. 31.

16. Leland and Foster.¹⁴ Gutman, Benedict, Baxter and Palmer.¹⁵ 17. Wilson, L. B., and Kendall, E. C.: The Relationship of the Pathological Histology and the Iodine Compounds of the Human Thyroid, *Am. J. M. Sc.* 151: 79, 1916. Gutman, Benedict, Baxter and Palmer.¹⁵

7. Fulton, M. H., and Alt, H. L.: Comparative Effect of Different Iodine Preparations in the Preoperative Treatment of Thyrotoxicosis, *New England J. Med.*, 203: 327 (Aug. 14) 1930. Lerman, J., and Means, J. H.: Comparison of the Effect of Ethyl Iodide and Potassium Iodide with That of Lugol's Solution, *Am. J. M. Sc.* 181: 745 (June) 1931.

8. Means, J. H.; Thompson, W. O., and Thompson, P. K.: On the Nature of the Iodine Reaction in Exophthalmic Goiter, *Tr. Am. Physicians* 43: 146, 1928.

9. Thompson, W. O., and Means, J. H.: Comparison of Exophthalmic Goiter in Boston and Chicago, *J. A. M. A.* 99: 1483 (Oct. 29) 1932.

iodine compounds such as diiodotyrosine. But, as pointed out by Wilson and Kendall,¹⁷ these changes in the thyroid gland are probably secondary and do not play a determining causal rôle in the course of hyperthyroidism.

It has been shown that when gram doses of diiodotyrosine are fed to rabbits, some diiodotyrosine is absorbed intact,¹⁸ as indicated by the recovery of diiodotyrosine and 3,5-diiodo-4-hydroxyphenyllactic acid in the urine.¹³ When fed in such enormous doses, only about 10 per cent of the total iodine excreted was found to be in inorganic form. It is not known what proportion of diiodotyrosine is broken down when given in therapeutic doses to patients. It is not impossible that, when administered in small quantities, no diiodotyrosine is absorbed as such and the effects observed in hyperthyroidism are due to inorganic iodine split off in the alimentary tract. For this reason, an attempt was made to estimate diiodotyrosine as the free amino-acid in the thyroid glands of our patients given diiodotyrosine. The glands, dried at 70 C. for from twenty-four to forty-eight hours, were extracted with tenth normal sulphuric acid,¹⁹ in which diiodotyrosine is soluble and relatively stable. The extract was then ultrafiltered and the ultrafiltrate examined for inorganic iodine.¹³ More than half of the ultrafilterable iodine could be accounted for as iodides, in most instances, but an appreciable fraction gave a silver precipitate which was acid soluble, reacting like diiodotyrosine (table 1). A mean of 94 per cent of ultrafilterable iodine was recovered as iodides from six thyroid glands of patients given compound solution of iodine. This is within the limit of error of recovery in known potassium iodide solutions.

CONCLUSIONS

We are more impressed with the similarities than by the differences between the response of hyperthyroid patients to diiodotyrosine and to other iodine compounds. The effects are indistinguishable as to time of onset of remission, the period required for maximum response, the duration of remission, the exacerbation when medication is discontinued, the response when again administered,¹ the ultimate development of a refractory state, the success of intermittent dosage in mild cases,¹ and the characteristic clinical, metabolic, histologic and chemical changes common to the two. The conclusion that the effects of diiodotyrosine and of inorganic iodine are essentially the same appears justified. It has been suggested⁴ that the effects of iodine in hyperthyroidism are due to the influence of diiodotyrosine that is formed. Ignorance of the intermediary iodine metabolism of the thyroid gland makes it impossible to prove or disprove this assumption. Diiodotyrosine has not been conclusively shown to have any physiologic activity that could be regarded as antagonistic to thyroxine. The lowering of the basal metabolic rate of animals fed thyroid gland by added diiodotyrosine was not observed by Kommerell¹⁹ in dogs or in this laboratory in guinea-pigs.²⁰ Diiodotyrosine does not lower the basal metabolism of normal animals, as might be expected of a substance having an

effect antagonistic to thyroxine. One might expect, furthermore, that administration of thyroxine in the form of thyroid gland, which also contains a large proportion of diiodotyrosine, would not produce as great an effect on the metabolism as an equivalent amount of thyroxine in the form of the free amino-acid. That this is not the case is well established. It should be pointed out that the only definite physiologic activity which diiodotyrosine has been shown to possess is the acceleration of metamorphosis in amphibia, in which respect it acts like thyroxine.

SUMMARY

1. Thirty patients with hyperthyroidism were prepared for thyroidectomy by administration of diiodotyrosine. The reports of earlier workers that diiodotyrosine induces clinical remission and a fall in the basal metabolic rate were confirmed.

2. The degree and characteristics of the clinical and metabolic response were essentially similar to those obtained with compound solution of iodine and sodium iodide. The total iodine and thyroxine contents of the resected thyroid glands were found to fall within the range of variation of glands obtained from patients given inorganic iodine.

3. No evidence was obtained to justify the impression that the effect of diiodotyrosine in hyperthyroidism is specifically different from that of other forms of iodine.

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DERMATITIS PRODUCED BY COSMETICS (LA GERARDINE)

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Dermatitis produced by cosmetics through direct contact is becoming a more frequently established and recognized condition, but the specific agent responsible for this eruption has to be ferreted out of an almost endless number of these so-called beautifying preparations.

As the eruption may develop either immediately after the use of a new preparation as a result of specific hypersensitivity or of chemical irritation, or only after a long period of use, as a result of sensibilization, created through frequent and constant use, difficulty arises in finding the cause. A subconscious defensive attitude on the part of the patient when the subject of cosmetics is broached adds further hindrance.

It may be profitable to mention what arouses one's suspicion of a dermatitis produced by contact with cosmetics:

1. Location of the eruption.
2. Sudden appearance.
3. Intense subjective symptoms (burning and itching).
4. Time element.
5. Type of skin eruption.

These points need further elucidation:

1. *Location.*—The area in which the eruption originally began is of the greatest importance and must be carefully elicited. As a general rule, only the exposed surfaces become involved, but in severe cases, through scratching, distant parts may become secondarily affected.

From the Pittsburgh Skin and Cancer Foundation.

18. Oswald, A.: Ueber den Abbau des Dijodotyrosins im tierischen Organismus, *Ztschr. f. physiol. Chem.* 65:141, 1910. Foster and Gutman.²³

19. Kommerell, B.: Zur Frage der Wirkung des Dijodotyrosins auf den thyreotoxischen Stoffwechsel, *Arch. f. exper. Path. u. Pharmacol.* 165:169, 1932.

20. The normal oxygen consumption of three guinea-pigs (94.1, 91.7 and 95.0 cc. per square meter per minute) was increased 24, 47.3 and 38.3 per cent by feeding thyroid. After ten days on the same daily dosage of thyroid + 50 mg. of diiodotyrosine, the oxygen consumption remained 38.4, 50.3 and 39.7 per cent, respectively, above the initial value. The determinations were made in a modified Benedict closed circuit apparatus by Dr. J. P. Leland, to whom we are greatly indebted.

Dependent on the location of the commencement of the eruption, the following causative factors may be suspected:

Scalp: Hair tonics and hair dyes. (Usually only chemical irritants contained in hair tonics cause a dermatitis in the scalp, such as tincture of capsicum or of cantharides.)

Forehead: Hair lotions, hair dyes, tissue creams.

Eyelids: Hair tonics, hair dyes, massage creams, eye washes, face powder, nasal sprays.

Nose: Nasal sprays.

Circumoral Area: Tooth powders, tooth pastes, mouth washes, lip rouge.

Face: Face creams, face powder, hair tonics, hair dyes, hair waving preparations, soap, depilatories.

Retro-Auricular Area: Perfume, hair tonics.

Neck: Perfume, hair dyes, hair waving preparations, hair tonics, massage creams (especially lemon creams).

Axillae: Deodorants, depilatories, perfume.

Nipples and Navel: Perfume.

Under the Breasts: Powder, soap.

Nails: Nail paints, manicuring aids.

Groin and Anal Region: Menstrual pads, toilet paper, deodorants hair dyes.

Legs: Depilatories, soaps.

Interdigital Areas and Soles: Dusting (foot) powders.

2. *Sudden Appearance.*—Usually the eruption appears without prodromal symptoms. If it is due to a strong chemical in the preparation, the objective symptoms of redness and swelling occur rapidly; if due to hypersensitivity, the symptoms will usually be much milder.

3. *Intense Subjective Symptoms.*—In most instances the itching and burning are extremely out of proportion to the amount of involvement. Especially is this true of the symptom of itching. There is an intense desire on the part of the patient to rub open the affected areas.

4. *The Time Element.*—Both the time of the appearance and the time of greatest intensity of the symptoms are important. Dermatitis produced by strong chemicals will occur in direct ratio to the application, while the intensity of the eruption in all cases will have a definite periodicity associated with the application of the cosmetic. One must bear in mind that the cosmetic applied to the scalp will cause the symptoms during the night and on arising, because very frequently the condition is spread from the scalp to the more sensitive areas of the face and neck through contact with the bed linen.

When the eruption is due to a perfume in the preparation, sunlight is usually required to bring it out, and therefore both the subjective and the objective symptoms will arise after this secondary exposure. When it is due to a cream, it invariably starts within a half hour after the application. When it is due to a powder (this is usually a sensitivity to orris root, which is frequently a component part of face powder), the time of occurrence is usually after the patient gets warm and, in order to get rid of the perspiration and sebaceous fatty excretion on her face, repowders with a good deal of vigor.

5. The type of skin eruption varies from a simple erythema to a marked excoriation and even loss of epidermal structure. Frequently, however, it is ill defined and bilateral but not symmetrical.

The patient need not be the one using the irritant. Contact dermatitis may arise from husband, wife or any close associate.

The type of eruption produced by the various cosmetics may be summarized in a general way in the following manner:

Creams usually produce a fine vesicular eruption on an inflammatory base, which is pale pink. The more vigorous the massage and the finer the texture of the skin, the more marked is the resultant clinical picture.

Powders and rouge produce an erythema and a slight amount of scaling not unlike an erythematous type of lupus erythematosus.

Tooth cleansing preparations produce a dry scaling hyperemia of the lips and may show slight vesiculation and cracking on the mucous surfaces.

Hair preparations produce an edema and redness of the upper eyelids which soon increases in severity and results in a fissuration of the transverse fold, minute vesicles on the forehead along the hair line and vesicular dermatitis of the ears.

Perfumes produce elongated, red, edematous, plaque-like lesions, brought out or intensified by sunlight; a dark brown persistent pigmentation replaces the red-den patch after a time.

Nail paints and manicuring aids produce a scaling and breaking of the nail plates and occasionally an inflammation of the nail fold.

Deodorants and depilatories produce an indolent folliculitis which sooner or later becomes suppurative and spreads by contiguity.

The art of history taking is nowhere more difficult, because of the patient's elusive and evasive replies. However, one must ascertain the following:

1. The name, make and kind of all the cosmetics used. Specific questions should be asked about powders, rouges, massage creams, vanishing and cleansing creams, skin foods, tonics, washes, hair preparations, wave-setting fluids, lip sticks, eyebrow pencils and the like.

2. The frequency and the time of their use.

3. The onset and duration of the eruption.

4. The time of greatest intensity. The latter I found to be of inestimable value, especially when the periodicity of the eruption's greatest intensity may be ascertained.

Both the direct and the indirect method should be used to prove the specific cosmetic responsible for the eruption. This is accomplished as follows:

First, by skin testing: A small amount of the suspected cosmetic is placed in apposition with the skin of the forearm and kept there with an impervious dressing for from twenty-four to forty-eight hours. Since at times a broken skin surface is necessary to produce the dermatitis, a second patch is applied over a superficially scarified area. As a control, an unaffected individual is used. The test will be considered positive if an erythema or a vesicular erythema appears and persists for twenty-four hours at the site of the patch test. If a cream is suspected, it must be massaged into the area tested. An exacerbation of the original symptoms may frequently result after the patch test has been applied.

Secondly, the elimination of the cosmetic should be followed by the disappearance of the symptoms. When the cosmetic suspected has been used for the hair, it is necessary to have a thorough shampoo. After all the symptoms have cleared, reapplication of the cosmetic gives a recurrence of the symptoms.

Three cases of circumscribed dermatitis came under my observation within the last few months which illustrate some of these points mentioned. All three were

caused by the preparation "La Gerardine," which is used for producing "natural" waves in the hair.

REPORT OF CASES

CASE 1.—Mrs. F. B. I., aged 37, an American housewife, consulted me, March 22, 1933, for an intensely itchy eruption which involved her neck, anteriorly and laterally. The lesions consisted of a number of discrete, pinpoint to pea-sized, ill defined macules and vesicopapules. The latter appeared on an elevated, erythematous base, not unlike a lesion produced by an insect bite. The itching was constant; it was most intense three or four hours after retiring and on awakening. The condition was of five or six weeks' duration.

The sudden onset, the limitation of involvement, the lack of symmetry (though bilateral) and the periodicity of intensity all suggested a contact dermatitis.

Thorough questioning as to cosmetics for the skin and hair, the wearing of new furs or clothes, the recent dry cleaning of these, and contact with plants, vegetable oils, perfumes and the like led nowhere.

A local preparation of calamine was prescribed, which seemed to stop the subjective symptoms, but the lesions persisted.

Three weeks later the nape of the neck became involved also, and the itching of the entire neck became intolerable. This time I insisted that the patient describe in minute detail everything she did in the way of her toilet, including what was done for her at the hair dressers. It was then that the use of a hair waving preparation called "La Gerardine" was mentioned. The disconcerting thing about this was the fact that she had been using the preparation for the last three years. Having had patients who developed sensibilization after prolonged use of a substance before, I instituted the following treatment:

A thorough shampoo of the hair was given. There was an almost instant relief from the itching, and the lesions disappeared in about three days.

Reapplication of "La Gerardine," after a period of a week's freedom, reproduced both the subjective and the objective symptoms; a thorough shampoo again cleared the dermatitis.

CASE 2.—Miss A. W., aged 30, a beautician, consulted me, Feb. 10, 1933, for a small patch of dermatitis over the left zygomatic area and a few ill defined circumscribed areas of intensely itchy plaque-like erythematous lesions on the sides of her neck.

One year previously I treated the patient for a nickel dermatitis of her neck and wrist (she was then wearing eye glasses on a metal chain and a metal encased wristwatch), and I assumed that this was a return of the condition, though the patient insisted that she had not come in contact with any metal.

One-fourth unit of roentgen ray was given, and I asked the patient to refrain from the use of all cosmetics. Though there was some improvement for a time, the condition kept on recurring. After the causative agent in case 1 was determined, I found that this patient, too, was using "La Gerardine" on her hair.

A thorough shampoo, a change of the bed linen and the discontinuation of "La Gerardine" promptly cleared up the skin. Reapplication of this preparation caused a recurrence of the eruption, which again yielded to the treatment.

CASE 3.—Mrs. E. P., aged 29, a housewife, complained of an acute eruption on her face, which had developed six days before examination. There were about eighty millet-sized to pea-sized lesions covering the face and neck anteriorly and laterally. Each lesion appeared as a discrete erythema with minute vesiculation. In most of them the epidermis had scaled off, leaving a somewhat shiny base. The eruption was extremely itchy.

Eight days before after a shampoo of the hair, the patient began to use "La Gerardine" to put a "natural" wave in her hair. Since that day she had been spraying this preparation on her hair with an atomizer, according to the directions on the circular with this preparation.

Shampoo of the hair, change of pillow cases and discontinuation of the use of "La Gerardine" was followed by almost instantaneous clearing of the eruption.

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FUNDAMENTALS OF ASPHYXIA

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Asphyxia is the most frequent and the most important of all pathologic processes. This is true because respiration—the exchange of oxygen and carbon dioxide and the production of energy—is the most fundamental process of life. Any disturbance of the circulation, any alteration of the cells of any tissue almost inevitably involves an alteration of the respiratory activity of one or more organs, or of the body as a whole. A large part of all the structural abnormalities that the pathologist studies involve perversions of tissue respiration. This is true, for instance, of cancer cells. There is good evidence, also, that not only such temporary psychic phenomena as unreasonableness in aviators and mountaineers, but even catatonic lethargy and other symptoms of insanity are dependent on impairment of the respiration of the brain.

Evidently asphyxia is something much broader than the acute conditions that are being discussed today. It is not only carbon monoxide poisoning, asphyxia of the new-born, the effects of hemorrhage and anemia, or the state of a patient after prolonged anesthesia; it is the state that develops in one way or another in the majority of all human beings as death from disease approaches. Unless one is burned alive, the tissues of one's body always die of asphyxia.

STAGES OF ASPHYXIA

What then is asphyxia? Primarily it is a state or series of states induced by an oxygen supply short of tissue needs. But deficiency of oxygen is only the initial cause and first stage of asphyxia. Life is not like a candle that on extinction can be immediately relighted. Recovery from asphyxia in an untreated patient is often extremely slow, indicating that certain conditions and processes, far more complex than mere deficiency of oxygen, have to be slowly and with difficulty reversed. If asphyxia of a little less than fatal intensity is prolonged, it may in rare cases render a man permanently an idiot as completely as if his cerebrum had been removed. Tissue degeneration, once started, is not immediately reversed by even the most ample supply of oxygen.

The problem of asphyxia puts before us, then, first and foremost the question: What is the significant element secondary to oxygen deficiency that lack of oxygen induces? What is the critical factor in the second stage of asphyxia? The answer to this question is perhaps one of the most extraordinary that science has ever given. It is simply this: The critical element in the second stage of asphyxia is deficiency of carbon dioxide. Beyond this second stage there are a series of other stages leading to autolysis, fatty degeneration, and necrosis.

THE DISCOVERY OF ACAPNIA

The initial observations that led me to this conception of the second stage of asphyxia were made twenty-five or thirty years ago and were published as studies on acapnia.¹ Acapnia means deficiency of carbon dioxide.

From the Laboratory of Applied Physiology, Yale University.

Read before the Society for the Prevention of Asphyxial Death at the New York Academy of Medicine, New York, May 24, 1933.

1. Henderson, Yandell: Acapnia as a Factor in Shock, *Brit. M. J.* 2: 1812, 1906; Fatal Apnea and the Shock Problem, *Bull. Johns Hopkins Hosp.* 21: 235 (Aug.) 1910; Acapnia and Shock, *Am. J. Physiol.* 21: 126 (Feb.) 1908; 23: 345 (Feb.) 1909; 24: 66 (April) 1909; 25: 310 and 385 (Feb.) 1910; 26: 260 (June) 1910; 27: 152 (Nov.) 1910. Henderson, Yandell, and Harvey, S. C.: *Ibid* 46: 533 (Aug.) 1918.

Unfortunately, I gave the word an accessory significance: I regarded it as the result of simple overbreathing. I see now that the overbreathing itself is secondary to deficiency of oxygen somewhere in the body. This deficiency induces the liberation of some substance which acts on respiration and thus induces overbreathing. I shall, therefore, in the future give the second stage of asphyxia another name. I shall call it "acarbica." I define acarbica as the asphyxial diminution in the bicarbonates of the blood.

The conception of acapnia, crude as it was, has yet been useful. By it anesthetists were led to use rebreathing. From this practice they have learned to avoid the stage of excitement, overbreathing, and excessive elimination of carbon dioxide. They thus avoid inducing the condition of simple acute acapnia and failure of respiration. Today a competent anesthetist conserves the carbon dioxide store of the body. As a result, very few patients now die from respiratory failure on the operating table, an occurrence once common.

The idea that the carbon dioxide store of the body should be conserved, or sometimes even increased, seemed at first to be opposed to one of the great fundamental discoveries of science. A hundred and forty years ago, Lavoisier discovered that the body consumes oxygen and produces and excretes carbon dioxide. Carbon dioxide was therefore generally classed with other excreta. To administer it to a patient seemed as illogical as to employ urine as a therapeutic agent. Furthermore, measures to keep carbon dioxide in the body were regarded as essentially equivalent to keeping oxygen out. Even today, the dictionaries, including medical dictionaries, define asphyxia not only as deficiency of oxygen, which it is, but also as excess of carbon dioxide, which it is not.

THE ACID-BASE BALANCE OF THE BLOOD, AND SO-CALLED ACIDOSIS

No sooner was this difficulty overcome than a new and greater difficulty arose. Toward the end of the last century the great Swedish scientist Arrhenius introduced into chemistry the idea that salts, acids and alkalis in solution are separated into their component elements and act as ions. From this idea the conception developed that in all solutions the acid and alkaline elements interact to maintain what is now called the hydrogen ion concentration of the solution: the quantity now expressed by the symbol p_H . This conception was introduced into physiology by L. J. Henderson,² who showed that in the balance of acids and alkalis in the blood the acid is chiefly carbonic acid and the alkaline factor chiefly bicarbonates. Van Slyke³ called these bicarbonates the "alkaline reserve." For their measurement he invented the useful modification of the mercury pump that is now in universal use. These were great contributions; but they have also lent support to a misconception of long standing,⁴ namely, that all the conditions called "acidosis" involve intoxication by acid.

Intoxication by acid would, of course, partially neutralize the bicarbonates of the blood and thus diminish the so-called alkaline reserve. Accordingly, when it was found that the amount of the bicarbonates in the blood—that is, the amount of carbon dioxide that can be got out of the blood—is diminished, it appeared that

theory and observation, laboratory and clinic, were in complete agreement. Nothing could be clearer, more logical or more satisfying than this conception. It is now taught as gospel truth to every medical student. Let any clinician go to any biochemist with a question in regard to the topics discussed in this paper and the biochemist will state this conception as one of the most important and most certain of the principles of his science.⁵

The only trouble is that this inference from physico-chemical theory, when put to the test on living men and animals, proves in certain crucial features to be flatly contradicted by facts. I shall mention three such tests.

TESTS FOR ACIDOSIS

First, there is the obvious test consisting in the administration of alkalis to patients with so-called acidosis. When the acid-base equilibrium of the blood was first presented to physiologists and clinicians as a fundamental feature of the living system, it was recognized that, according to this conception, acidosis should be relieved by the administration of alkalis. This therapy has in fact been widely tried.

In diabetic acidosis, before the discovery of insulin, sufficient alkali was often administered to restore the normal bicarbonate content of the blood; yet the patients died. In some conditions the administration of alkali has even proved to be injurious. I tried it on a patient in one of the classic forms of so-called acidosis: that induced by carbon monoxide asphyxia. The effect fell just short of immediate death. I warn against administering alkali to asphyxiated new-born babies, although they also have what is now called acidosis. The facts that I shall give presently make it exceedingly probable that the baby would die.

The second test is one that a number of critics have emphasized on theoretical grounds but have neglected to put to practical test, either experimental or clinical. On the other hand, I have applied this test both experimentally and clinically with results that refute the critics' inferences from theory. According to theory, the principal acid of the blood, in fact the only free acid, is carbonic acid; that is, carbon dioxide in solution. Any condition of what is now called acidosis—the condition that I call acarbica—especially when the normal alkalinity, or p_H , of the blood is also diminished, is therefore interpreted as involving at least a relative excess of carbon dioxide. From this it follows, as critics have pointed out, that the administration of carbon dioxide must "intensify the acidosis." The inference is that "intensification of acidosis" should be distinctly injurious to the patient. The logic is almost perfect. It is only the facts that perversely refuse to correspond.

RESUSCITATION BY INHALATION OF CARBON DIOXIDE

Many years ago, my colleague Dr. H. W. Haggard and I decided that in spite of the prevailing theory we would try out the therapeutic possibilities of carbon dioxide inhalation on two classes of patients: (1) the victims of carbon monoxide asphyxia, and (2) patients who came from the surgical operating room in the deep

2. Henderson, L. J.: *Blood, a Study in General Physiology*, Yale University Press, 1928.

3. Peters, J. P., and Van Slyke, D. D.: *Quantitative Clinical Chemistry*, Baltimore, Williams & Wilkins Company 1: pp. 868-1018, 1931.

4. Stadelmann, E.: Ueber die Ursache der pathologische Ammoniakauscheidung beim Diabetes mellitus und dem Coma diabeticum, *Arch. f. exper. Path. u. Pharmacol.* 17: 419, 1883.

5. This subject is discussed from every angle in the Transactions of the Association of American Physicians in 1916 by J. Howland, E. T. Woodyatt, C. Frothingham, L. G. Rowntree, L. J. Henderson, E. P. Joslin, C. F. Hoover, D. D. Van Slyke, H. A. Hare, S. J. Meltzer, T. C. Janeway, and Yandell Henderson; also in New York M. J. 104: 1119, 1916; also in *Acidosis and Alkalosis*, by Stanley Graham and Noah Morris, published by William Wood and Company, New York, in 1933.

postanesthetic depression that was then common. Both of these classes of patients have very definitely what is now generally called acidosis. Cannon⁶ observed it in wounded soldiers during the war. The administration of carbon dioxide to patients in postanesthetic depression met therefore with the objection that the administration of carbon dioxide must "intensify acidosis."⁷

Fortunately, we could also justify the inhalation of carbon dioxide on grounds that others would accept. We avoided discussion of the problem of acidosis lest it stir up controversy and retard the introduction of measures for the saving of life. We used as our argument the fact, demonstrated by the elder Haldane⁸ and his co-workers, that carbon dioxide stimulates respiration. We stressed only the fact that increase of breathing hastens the elimination of carbon monoxide, ether and other volatile substances from the blood. We did not stress the fact, which is really much more important, that carbon dioxide inhalation hastens recovery of normal conditions after asphyxia or anesthesia,⁹ even when there is no foreign substance like carbon monoxide, anesthetics or other volatile substances to be eliminated.

Today, carbon dioxide, diluted in oxygen or air, is everywhere the accepted therapy for carbon monoxide asphyxia.¹⁰ The rescue crews of practically all American fire and police departments and gas and electric light companies are equipped with inhalators for the administration of carbon dioxide diluted with oxygen. There are more than 3,500 inhalators in use, and it is conservatively estimated that more than 50,000 cases of carbon monoxide poisoning, drowning and other forms of asphyxia are treated by this means annually. Many hundreds of lives have been saved; and as yet there is no evidence whatever in any single case of any such effect as would be involved in an "intensification of acidosis."

6. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, *J. A. M. A.* 70: 531 (Feb. 23) 1918.

7. Van Slyke, D. D.; Austin, J. H., and Cullen, G. E.: Effect of Ether Anesthesia on Acid-Base Balance of Blood, *J. Biol. Chem.* 53: 277 (Aug.) 1922. Cullen, G. E.; Austin, J. H.; Kornblum, K., and Robinson, H. W.: The Initial Acidosis in Anesthesia, *ibid.* 56: 625 (June) 1923. Austin, J. H.; Cullen, G. E.; Gram, H. C., and Robinson, H. W.: The Blood Electrolyte Changes in Ether Acidosis, *ibid.* 61: 829 (Oct.) 1924. Collip, J. B.: Effect of Surgical Anesthesia on Reaction of Blood, *Brit. J. Exper. Path.* 1: 282 (Dec.) 1920. Leake, C. D.; Leake, E. W., and Koehler, A. E.: The Acidosis of Ether Anesthesia in the Dog, *J. Biol. Chem.* 56: 319 (June) 1923. Leake, C. D.: The Effect of Ethylene-Oxygen Anesthesia on the Acid-Base Balance of Blood: A Comparison with Other Anesthetics, *J. A. M. A.* 83: 2062 (Dec. 27) 1924. Ronzoni, Ethel; Koehlig, Irene, and Eaton, Emily P.: Ether Anesthesia: III. Role of Lactic Acid in the Acidosis of Ether Anesthesia, *J. Biol. Chem.* 61: 465 (Sept.) 1924. Stehle, R. L., and Bourne, Wesley: Concerning the Mechanism of Acidosis in Anesthesia, *ibid.* 60: 17 (May) 1924. Reimann, S. P., Bloom, G. H., and Reimann, H. A.: Administration of Carbon Dioxide After Anesthesia and Operation: The Acid-Base Regulatory Mechanism, *J. A. M. A.* 76: 437 (Feb. 12) 1921. Carter, W. S.: The Effect of Ether Anesthesia on the Alkali Reserve, *Arch. Int. Med.* 46: 319 (Sept.) 1920.

8. Haldane, J. S.: Respiration, Yale University Press, 1922.

9. Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the CO₂ Capacity of the Blood: I. High Levels of CO₂ and Alkali Induced by Ether: Their Prevention and Reversal, *ibid.*, page 345; II. The Effects of Excessive Pulmonary Ventilation, *ibid.*, page 355; IV. The Sequence of Trauma, Excessive Breathing, Reduced CO₂ Capacity and Shock, *ibid.*, page 365. Haggard, H. W., and Henderson, Yandell: Hematorespiratory Functions (twelve papers), I. The CO₂ Diagram of the Blood and the Laws of Respiration, *ibid.* 39: 163 (Aug.) 1919; III. The Fallacy of Asphyxial Acidosis, *ibid.* 43: 3 (Aug.) 1920; IV. Relation of Oxygen Tension and Blood Alkali in Acclimatization to Altitude, *ibid.* 43: 15 (Aug.) 1920. Henderson, Yandell: V. Relation of Oxygen Tension and Blood Alkali in Acclimatization to Altitude, *ibid.* 43: 29 (Aug.) 1920. Haggard, H. W., and Henderson, Yandell: XII. Respiration and Blood Alkali During Carbon Monoxide Asphyxia, *ibid.* 47: 421 (July) 1921. Henderson, Yandell: Physiological Regulation of the Acid-Base Balance of the Blood and Some Related Functions, *Physiol. Rev.* 5: 131 (April) 1925; Oxygen and Everest, *Nature* 129: 649, 1932. 10. Henderson, Yandell, and Haggard, H. W.: The Elimination of Carbon Monoxide from the Blood After a Dangerous Degree of Asphyxiation, and a Therapy for Accelerating the Elimination, *J. Pharmacol. & Exper. Therap.* 16: 11 (Aug.) 1920; The Treatment of Carbon Monoxide & Asphyxia by Means of Oxygen Plus CO₂ Inhalation, *J. A. M. A.* 79: 1137 (Sept. 30) 1922. Henderson, Yandell: Resuscitation from Carbon Monoxide Asphyxia from Ether or Alcohol Intoxication and from Respiratory Failure Due to Other Causes, *ibid.* 83: 758 (Sept. 6) 1924; The Dangers of Carbon Monoxide Poisoning and Measures to Lessen These Dangers, *ibid.* 84: 179 (Jan. 18) 1930.

As regards the use of carbon dioxide in connection with anesthesia, the cases that have been treated are numbered by hundreds of thousands. The use of carbon dioxide in connection with surgical anesthesia is one of the most widely employed accessories of the modern surgical operating room. I do not mean to assert that carbon dioxide should be administered to every patient; but in many cases it is absolutely of life-saving value. It does far more than merely stimulate breathing. It is the dilatation of the thorax and increase of the vital capacity by better tonus rather than the increase of breathing that overcomes atelectasis.¹¹ Carbon dioxide is in fact the most widely active hormone, or chemical regulator, in the body.

The observations that Haggard, Coburn and I¹² made on the cases that we studied at the initiation of this use of carbon dioxide showed that, during anesthesia of the badly administered type then common and after surgical operations, there was a very marked decrease of the alkali bicarbonates of the blood. This is the feature that has led others to conclude that such patients suffer from acidosis. What we found was that, under inhalation of carbon dioxide, the normal amount of alkali bicarbonates in the blood is quickly restored. The circulation improves correspondingly and the patient is thus not only freed from excess of ether but largely restored to normality; Porter¹³ also observed this on shocked soldiers during the war.

ALLEGED ACIDOSIS IN ASPHYXIA NEONATORUM

One of the most important and now most widely applied uses of carbon dioxide is in the resuscitation of asphyxiated new-born babies.¹⁴ Resuscitation of these cases by means of carbon dioxide diluted in oxygen may fairly be described as a close imitation of nature's own method. It is oxygen that keeps what is called the respiratory center alive and capable of activity. It is the carbon dioxide of the blood that stimulates the center to activity. These are the main facts of respiration in the adult, and they are equally true of the new-born baby. The inhalational method of resuscitating the still-born affords as perfect a demonstration of the physiology of respiration as any that has ever been performed in a laboratory.^{14a} There is ample clinical testimony that, in a large proportion of all nonbreathing or poorly breathing infants, natural respiration develops quickly after the lungs are dilated with a sufficient percentage of carbon dioxide mixed with oxygen.

Yet, objection has been raised on the basis of biochemical theory.¹⁵ Investigation has shown that in still-born babies the blood has all the characteristic

11. Henderson, Yandell: Acanthia as a Factor in Postoperative Shock, Atelectasis and Pneumonia, *J. A. M. A.* 95: 572 (Aug. 23) 1930. Brunn, H., and Brill, S.: Observations on Postoperative Atelectasis: Consideration of Some Factors in Its Etiology, Prevention and Treatment, *Ann. Surg.* 92: 801 (Nov.) 1930.

12. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, *J. A. M. A.* 74: 783 (March 20) 1920.

13. Porter, W. T.: Shock from Fat Embolism of the Vasomotor Center, *Am. J. Physiol.* 71: 277 (Jan.) 1925.

14. Henderson, Yandell: The Initiation of Respiration at Birth, *Nature*, Aug. 25, 1928; The Prevention and Treatment of Asphyxia in the New-Born, *J. A. M. A.* 90: 583 (Feb. 25) 1928; Incomplete Dilatation of the Lungs as a Factor in Neonatal Mortality, *ibid.* 96: 495 (Feb. 14) 1931. McIlroy, A. L.: A Method for the Induction of Respiration in the New-Born, *Lancet* 2: 373 (Aug. 20) 1927. Wiener, Rudolf: Erfahrungen über die Behandlung der Asphyxie der Neugeborenen sowie der Zustände von schwerer Atemnot bei Neugeborenen und Säuglingen mit Kohlensäuregemischen, *Arch. f. Kinderh.* 95: 65, 1931. Brown, W. E.: Resuscitation of the New-Born, *Canad. M. A. J.* 28: 175 (Feb.) 1933; *abstr. J. A. M. A.* 100: 1893 (June 10) 1933. Also numerous unpublished reports collected by the author.

14a. Henderson, Yandell: Respiratory Experiments on Man, *J. A. M. A.* 62: 1133 (April 11) 1914.

15. Eastman, N. J.: Foetal Blood Studies: III. The Chemical Nature of Asphyxia Neonatorum and Its Bearing on Certain Practical Problems, *Bull. Johns Hopkins Hosp.* 50: 39 (Jan.) 1932.

features of so-called acidosis. The bicarbonates are low; the p_H is shifted in the acid direction, and there is a considerable increase of lactic acid. This is exactly what should have been expected. On the basis of these facts, the inference has been drawn that "the use of carbon dioxide as a resuscitating agent in asphyxia neonatorum is not only superfluous but may even be harmful in that it tends to aggravate an already existing acidosis." This theoretical objection to the treatment is not supported by any clinical test. It is not denied that the inhalation of carbon dioxide in proper dilution makes the baby breathe.

I have not investigated the blood changes in asphyxia neonatorum, and no one has investigated the return of normality in the blood in these cases under the inhalational treatment. I have merely collected and presented the evidence, which seems to me decisive, that asphyxia neonatorum is in all essential features identical with the other forms of asphyxia that I have studied intensively for more than twenty years. In all these forms of asphyxia, the administration of carbon dioxide is as important for remedial purposes as is oxygen itself. In fact, in many forms of asphyxia it is probable that carbon dioxide diluted with air is more effective than oxygen without carbon dioxide and almost as effective as carbon dioxide mixed with oxygen.

I shall return to the subject of asphyxia of the newborn a little later on. I want first to report the third test, which shows that so-called acidosis, at least when it results from lack of oxygen, is not acid poisoning.

ACIDOSIS WITHOUT ACID

In my laboratory during the past few years we have carried out experiments on asphyxia¹⁶ which show that inferences drawn from physical chemistry and applied directly to the problems of life and disease without adequate tests on living creatures may lead one far from the truth. Physiology and biochemistry have thus gone far astray in regard to the acid-base equilibrium of the blood and have led clinicians after them.

In our experiments, dogs were subjected to a progressively diminishing supply of oxygen until asphyxia and death resulted. Overbreathing occurred under these conditions in all cases. The carbon dioxide content of the blood was thus diminished and a progressive compensatory acarbica developed; that is, the content of bicarbonates in the blood diminished. Along with these developments, the present conception would have led one to expect a progressive increase in the amount of lactic acid in the blood, beginning even with the first slight decrease in the oxygen supply. But in fact in no case was there any increase of lactic acid in the blood until the oxygen had fallen to an asphyxial level and the animal was approaching death. Even then, the formation of lactic acid is best explained not as a form of intoxication but as a last desperate attempt of the living system to protect itself. It certainly is not a condition that can properly be defined as acid intoxication; for animals dying of asphyxia live longer if the atmosphere contains carbon dioxide.

We have carried proof still further.¹⁷ There is now a compound, monoiodoacetic acid, which has the extraordinary property of depriving the tissues of the powers to produce lactic acid. We have first administered this drug and have then asphyxiated the animals. As a result, all the signs of so-called acidosis, particu-

larly the acarbica, developed exactly as in undrugged animals; but without the formation of any lactic acid whatever.

THE H-ION CONCENTRATION OF THE BLOOD

From current theory it is often inferred that the balance of acids and bases in the body is determined merely by the relative amounts of these elements in the diet. Similarly, any alteration of the normal faint alkalinity of the blood is now often assumed to be due to the addition of alkali or acid to the blood. This would be true of nearly every other solution with which a chemist deals. But the living body manages otherwise; it regulates itself. I am not now speaking of the absolute amount of bicarbonate in the blood, but of the H-ion concentration, or p_H ; that is, the balance between bicarbonate and carbonic acid. When that balance is altered from the normal, the cause is really physiologic and not merely chemical. It is rarely due to abnormal nutrition or metabolism. It is generally due to an alteration of respiration because of an increase or decrease of the sensitivity of the respiratory center.

Perhaps the body is merely a chemical machine; but it rarely carries out its processes in the simple ways that chemists expect.

Even a slight depression of respiration increases the amount of carbon dioxide retained in the body and alters the blood in the direction of acidity. A slight increase of the sensitivity of the center increases the elimination of carbon dioxide and renders the blood more alkaline. From the standpoint of physical chemistry, an increase of H-ions (low p_H) means, of course, a relative excess of acid. But the acid that is in excess is merely carbonic acid; that is, carbon dioxide. What an alteration of the p_H of the blood really tells us is not whether the balance of acids and alkalis in the body is abnormal; it tells us rather that the sensitivity of the respiratory center is abnormally high or low. Alkalosis and acidosis, in the sense of high or low p_H , express disturbance of respiration. Only slight excess or decrease of breathing is needed to raise or lower the p_H greatly; and the excess or decrease depends on the sensitivity of the center. The p_H of the blood is really an index of the state of the respiratory center.

During the development of asphyxia, first an alkaline and then an acid shift occurs in the blood. Under slight oxygen deficiency in the first stage of asphyxia, the increased respiration overventilates the blood. The loss of carbonic acid leaves the blood relatively alkaline, and a compensatory decrease of bicarbonates occurs. Anoxemia thus leads to acapnia, and acapnia to acarbica. Later, under extreme anoxia, respiration is depressed; there is a relative excess of carbonic acid, and the blood is shifted in the acid direction.

The simplest explanation of these occurrences is that the supply of oxygen is the principal factor controlling the sensitivity of the respiratory center. A slight deficiency of oxygen causes the appearance in the blood of some substance that increases the sensitivity. Extreme deficiency, on the contrary, diminishes the sensitivity, so that an abnormally strong stimulus is required to excite activity. But neither oxygen nor oxygen deficiency, slight or intense, ever acts as a stimulus to the center. The stimulus is afforded by carbon dioxide acting through the p_H of the blood. The amount required depends on the sensitivity at the time. This conception applies to all forms of asphyxia, including the victims of drowning and still-born babies. They do not breathe in spite of a more than normal pressure of carbon

16. Henderson, Yandell, and Radloff, E. M.: The Chemical Control of Breathing, as Shown in the Acid Base Balance of the Blood, Under Progressive Decrease of Oxygen. *Am. J. Physiol.* 101: 647 (Sept.) 1932.
17. Henderson, Yandell, and Greenberg, L. A.: To be published.

dioxide and a very low p_{H} . The reason is that the sensitivity of the respiratory center has been depressed by anoxia. A much stronger stimulus than normal is required: it may be 7 per cent of carbon dioxide or 10 or 15 per cent. I know of one baby that at first responded to nothing less than 20 per cent and was thus resuscitated. Once respiration is started, and oxygen is thus supplied, the sensitivity of the respiratory center is gradually restored. As the sensitivity returns, less and less stimulus is needed, until finally the baby, or the victim of drowning or of carbon monoxide, again breathes with no more than the normal stimulus of 5 per cent of carbon dioxide in the air of the lungs.

SIMILARITIES AND DIFFERENCES BETWEEN ACIDOSIS AND ACARBIA

The most striking example of real acid poisoning is afforded by the experiments of J. B. S. Haldane¹⁸ on himself. He swallowed enough ammonium chloride to induce a true acidosis. The ammonium was converted into urea; and the hydrochloric acid that remained displaced carbon dioxide from the bicarbonates of the blood and diminished their amount. Breathlessness even on slight exertion and other symptoms of low blood alkali developed.

What appeared to be the same condition was induced in J. S. Haldane (father of J. B. S.) and myself when we spent five weeks together on top of Pike's Peak¹⁹ in the summer of 1911. In full acclimatization to such altitudes the bicarbonates of the blood are diminished and there is breathlessness on exertion. In these and other superficial features, the conditions defined by the Haldanes, father and son, were alike. But, fundamentally, these conditions were entirely different. In the one case a considerable part of the alkalis of the blood had been neutralized by acid. In the other, no appreciable amount of alkali had been lost; it was merely out of use. It was occult but ready to return to use whenever the conditions, particularly the pressures of oxygen and carbon dioxide, recalled it on our return to sea level.

In support of this distinction there are experiments that Haggard and I performed on dogs.⁹ We injected dilute hydrochloric acid into a vein until the blood alkali was diminished and respiration was increased: effects superficially like those induced by asphyxia. We then administered carbon dioxide both to such acidotic animals and to those which we had subjected to asphyxia. The former were unable to tolerate such treatment; the latter were quickly restored to health by it. It is the recall of the normal amount of alkali to the blood by inhalation of carbon dioxide and the accompanying functional recovery that constitute the chief benefit of inhalational therapy in asphyxia and related conditions. The increase of breathing is merely an accessory benefit.

The control of the amount of alkali in use in the circulating fluid of the body by the pressure and amount of carbon dioxide in solution appears to be one of the fundamental biologic reactions in all living things. It is now found by Thornton²⁰ to occur in plants essentially as I have found it in animals and men. Exposure of

plants to atmospheres containing increasing amounts of carbon dioxide causes the juices to become correspondingly not more acid but more alkaline. The p_{H} rises and the alkalis are increased. That this reaction is biologic is shown by the fact that the presence of oxygen is also essential; in the absence of oxygen the p_{H} is lowered under merely chemical forces. Perhaps the study of plants will contribute to a fuller understanding of this reaction so vital to the health of man.

The importance of the normal relation of oxygen, carbon dioxide and blood alkali is most significantly illustrated by mountain sickness and acclimatization to altitude. Under diminished pressure of oxygen, respiration generally increases rather slowly. The carbon dioxide and alkali of the blood are for a time out of their normal relation to oxygen, and mountain sickness occurs. When acclimatization is established and health returns, it is found that the carbon dioxide and alkali have been diminished to nearly the same percentage of their sea level value as is the oxygen pressure in the lungs. The conditions in mountain sickness are essentially like those of a man recovering from alcoholic intoxication; which is also a condition misinterpreted as acidosis.²¹ It is probable that all the conditions now called acidosis, which arise from asphyxia, general or local, or those which are related to asphyxia, such as anesthesia and crushing injuries, are in reality not acid poisoning but acarbica.

THE CLINICAL USE OF CARBON DIOXIDE

There is not space to deal here with the details of the technic of inhalational therapy. But it is important, at least, to point out that carbon dioxide may be administered according to two distinct plans: In one, a mixture of a certain percentage of carbon dioxide (formerly 5, now generally 7 per cent) in oxygen is used, and every patient breathes exactly this percentage regardless of his special condition and needs. In the other plan, a mixture of from 20 to 30 per cent of carbon dioxide in oxygen, or even pure carbon dioxide, is used. It is administered through an open mask so that air is inhaled and mixed with it. The amount of carbon dioxide is adjusted to the special requirements of the particular patient.

The first of these methods is suitable for the use of laymen, such as the members of the rescue crews of city gas companies, and the police and fire departments. It is vitally important that the victims of carbon monoxide asphyxia shall be treated at the earliest possible moment and generally before a physician arrives.

The second method is generally preferable in hospitals, particularly in connection with anesthesia. It is also very much cheaper. For most of the new-born babies that do not breathe spontaneously, or breathe poorly, mixtures of from 7 to 10 per cent of carbon dioxide in oxygen are sufficient. But in extreme cases, higher percentages of carbon dioxide are required and should be administered by an anesthetist accustomed to using apparatus that will supply controlled percentages. In such cases and in the prevention of postoperative pulmonary complications in adults, the amount of carbon dioxide should be adjusted according to the reactions of the patient. It is not enough, as some physicians, surgeons and even clinical investigators have done, to say to a nurse, "Give the patient carbon dioxide," without further specific directions or supervision.

18. Haldane, J. B. S.: Experiments on the Regulation of the Blood's Alkalinity, *J. Physiol.* 55: 265 (Aug.) 1921.

19. Douglas, C. G.; Haldane, J. S.; Henderson, Yandell, and Schneider, E. C.: Physiological Observations Made on Pike's Peak, Colorado, with Special Reference to Adaptation to Low Barometric Pressures, *Phil. Tr. Roy. Soc. London, Series B*, 203: 185-318, 1912.

20. Thornton, N. C.: Carbon Dioxide Storage: IV. The Influence of Carbon Dioxide on the Acidity of Fruits and Vegetables, *abstr. Am. J. Botany* 19: 843 (Dec.) 1932. Full paper to be published in Contributions of Boyce Thompson Institute for Plant Research, Inc., Yonkers, N. Y., in September, 1933.

21. Himwich, H. E.; Nahum, L. H.; Rakietsen, Nathan; Fazikas, J. F.; Du Bois, Delafeld, and Gilden, E. F.: The Metabolism of Alcohol, *J. A. M. A.* 100: 651 (March 4) 1933.

CONCLUSIONS

One of the fundamental conditions of health is the balance maintained by respiration between the pressure of oxygen and the amount of carbon dioxide in the body. Oxygen deficiency is the initial cause and first stage of asphyxia, out of which develops the second stage characterized by carbon dioxide deficiency and a compensatory decrease of the bicarbonates of the blood without considerable loss of alkali from the body.

The therapy that nature itself indicates to combat asphyxia and related conditions is therefore not only the restoration of an ample supply of oxygen but also the restoration of the normal amount of carbon dioxide. Carbon dioxide, then, recalls the normal amount of alkali into use and, with the return of the normal relations of oxygen, carbon dioxide, and blood alkali, the chief elements in the living system, the circulation, respiration, muscle tonus and mind, again become normal.

The facts that the clinical use of carbon dioxide has established force this alternative: either acidosis is a matter of small importance and intensification of acidosis does a patient no harm whatever, or many of the conditions now called "acidosis" are etiologically not acid poisoning.

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HORMONE DIAGNOSIS OF VIABILITY OF PREGNANCY

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The clinical diagnosis of viability of a pregnancy, especially in the early months, is usually difficult. Both the Aschheim-Zondek¹ and the Friedman² pregnancy tests may be of considerable help in determining life or death of the fetus. As Wilson and Corner,³ Wladika⁴ and Spielman⁵ have demonstrated, these two reactions depend on the presence or absence of viable chorionic villi. With the complete death of the chorionic tissue, the tests become negative. The prepituitary hormone is the substance which here plays the important rôle.

Besides the prepituitary, the female sex hormone is also considerably increased in pregnancy from the second month on. As early as 1926, we⁶ called attention to the importance of female sex hormone studies in pathologic pregnancy. In order to determine a possible interrelationship between life or death of a fetus and both of these hormones, studies of the hormones were instituted in cases in which missed abortion was suspected or expected.⁷ An exceptional opportunity to

study these cases was afforded by the fact that the method of choice in therapeutic abortion at the Mount Sinai Hospital, when indications are absolute and permanent, is radiotherapy. Two classes of cases were studied: first, those in which irradiation had been done and, second, those in which missed abortion was suspected on clinical grounds.

TECHNIC

The female sex hormone studies were made on the blood by the Frank-Golddberger method,⁸ 40 cc. being used for each determination, at intervals usually varying from one week to one month after irradiation was performed. Simultaneously, the Aschheim-Zondek or Friedman test was carried out on the urine. In the majority of cases, the Friedman test, which has superseded the Aschheim-Zondek reaction in our laboratories, was employed. The reaction obtained by the two tests in each case was compared with special reference to the period at which it became negative, indicating disappearance of the hormones. Subsequent expulsion of the fetus or continued viability clinically or by roentgen examination served as a check on the reliability of the results.

RESULTS

The total number of cases studied comprised thirty-three, of which twenty-three represented x-ray abortions and ten, other conditions. The tables show the essential features, both clinical and laboratory.

X-Ray Abortions.—Of the twenty-three x-ray abortions (table 1), in eleven the female sex hormone test became negative at periods varying from seven to twenty-nine days following irradiation, in one after forty-nine days, and in another after seventy-seven days. In the latter two it is to be noted that in the one no determination was made for thirty days, and in the other the negative result obtained after seventy-seven days was the only test performed. All of these patients passed dead fetuses spontaneously. Of the other ten x-ray abortions, the female sex hormone test was negative in five, either at the time roentgen treatment was instituted or immediately afterward. All these patients also aborted dead fetuses spontaneously. The remaining five cases in this group were positive. Four of the patients subsequently showed live growing fetuses necessitating operative removal, and the fifth patient, who later passed a dead fetus, showed first a strongly positive and later a weakly positive reaction.

The pregnancy test in these twenty-three cases varied considerably. Ten either were negative at the time of the first examination or became negative later; nine remained positive even on repeated examination, and in four cases the test was not done. It is to be noted here that, of the ten "positives" which subsequently became "negatives," in six the negative reaction occurred at a much later date than the "negatives" obtained by the female sex hormone test. Of the nine cases that remained positive, six showed the reaction a short time before abortion took place. In one case (P. K.) a blood anterior pituitary hormone determination by a method described by us⁸ showed a positive result.

Other Cases.—There were ten cases studied which were not x-ray abortions (table 2). The results obtained here have shed considerable light on the hormonal processes involved. In eight of the ten, missed abortion

From the Gynecological Service and the Division of Laboratories of the Mount Sinai Hospital.

1. Zondek, Bernhard, and Aschheim, Selmar: Schwangerschaftsreaktion aus dem Harn, *Klin. Wchnschr.* 7: 8 (Jan. 1) 1928.

2. Friedman, M. H., and Lapham, M. E.: A Simple Laboratory Procedure for the Diagnosis of Early Pregnancies, *Am. J. Obst. & Gynec.* 21: 405 (March) 1931.

3. Wilson, K. M., and Corner, G. W.: Results of the Rabbit Orientation Test in the Diagnosis of Pregnancy, *Am. J. Obst. & Gynec.* 22: 514 (Oct.) 1931.

4. Wladika, Walter: Die Aschheim-Zondeksche Schwangerschaftsreaktion bei pathologischer Schwangerschaft, *Zentralbl. f. Gynäk.* 55: 143 (Jan.) 1931.

5. Spielman, Frank: The Friedman Pregnancy Test, to be published.

6. Frank, R. T.: The Female Sex Hormone, Springfield, Ill., Charles C. Thomas, 1928.

7. Because of the similarity of the intra-uterine processes occurring in cases in which irradiation has been done to produce abortion and in those of spontaneous missed abortion, the two are here considered as a single entity.

8. Frank, R. T.; Goldberger, M. A., and Spielman, Frank: A Method for Demonstrating Prepituitary Maturity Hormone in the Blood of Non-pregnant Women, *Proc. Soc. Exper. Biol. & Med.* 28: 999 (June) 1931.

was suspected. The other two were cases in which the placentas were retained, one after delivery and the other at four months. In five cases the female sex hormone test gave a negative reaction. Of these, four were missed abortions as evidenced by the passage of

The urine pregnancy test was performed in only five of the ten cases in this group. Most of the others antedated the advent of reliable urine pregnancy tests. There were four "positives" and one "negative." The "positives" occurred in one patient (L. G.) who was

TABLE 1.—X-Ray Abortions

| Name | Last Menstrual Period | Diagnosis | Size of Uterus | X-Ray Date | Female Sex Hormone | Aschheim-Zondek | Aborted | Summary |
|-------|-----------------------|------------------------------------|----------------|------------|---|--|--------------------------------------|--|
| J. J. | 8/ 9/29 | Preg. +; mitral stenosis | 12 weeks | 12/ 4/29 | 12/ 5/29—Pos. 12/18/29—Pos. 12/29/29—Neg. | 12/ 5/29—Pos. 12/18/29—Pos. 12/24/29—Pos. 12/29/29—Neg. | 1/ 7/30 | F. S. H. pos. one day after x-ray treatment; neg. 14 days after x-ray; A-Z. pos. 20 days after x-ray; aborted 34 days after x-ray |
| R. G. | 9/17/29 | Preg. +; mitral and aortic disease | 12 weeks | 1/ 3/30 | 1/ 3/30—Neg. 2/ 4/30—Neg. 2/11/30—Neg. | 1/ 3/30—Pos. 2/ 4/30—Pos. 2/11/30—Neg. | 2/22/30 | F. S. H. neg. at time of x-ray; A-Z. pos. 32 days after x-ray, and neg. 11 days before fetus was passed |
| I. H. | 11/ 7/29 | Preg. +; heart disease | 8 weeks | 1/ 8/30 | 1/18/30—Pos. 2/ 3/30—Neg. | 1/ 9/30—Pos. 2/ 3/30—Neg. | 2/ 8/30 | F. S. H. pos. 10 days after x-ray; F. S. H. and A-Z. neg. 24 days after x-ray; aborted 30 days after x-ray |
| H. A. | 8/28/32 | Preg. +; gastric ulcer | 10 weeks | 11/ 8/32 | 12/ 5/32—Neg. | 10/17/32—Pos. 11/18/32—Pos. 12/ 1/32—Pos. 12/12/32—Pos. | 12/17/32 | F. S. H. neg. 27 days after x-ray; A-Z. remained pos. until 5 days before abortion; aborted 39 days after x-ray |
| M. R. | 10/28/32 | Preg. +; asthma | 2 months | 12/29/32 | 1/ 9/32—Neg. 1/25/32—Neg. | 1/ 9/32—Pos. 1/25/32—Pos. | 2/24/33 Does not feel life | Blood F. S. H. neg. 10 days after x-ray; A-Z. pos. 27 days after x-ray |
| L. C. | 9/ 2/32 | Preg. +; heart disease | 8 weeks | 11/ 7/32 | 11/ 7/32—Neg. | 11/ 7/32—Pos. 12/ 9/32—Pos. | 12/20/32 | A-Z. pos. 32 days after x-ray; aborted 43 days after x-ray |
| B. G. | 1/14/31 | Preg. +; gastric ulcer | 8-10 weeks | 3/ 4/31 | 4/24/31—Pos. | 4/25/31—Pos. | 5/27/31 | X-ray ineffectual; blood F. S. H. and A-Z. pos. 51 days after x-ray; abortion induced |
| E. G. | 8/ 2/31 | Preg. +; hyperthyroidism | 10 weeks | 11/ 3/31 | 11/13/31—Neg. 11/30/31—Neg. | 11/13/31—Pos. 11/20/31—Pos. | 11/25/31 | F. S. H. neg. 10 days after x-ray; A-Z. pos. 17 days after x-ray, 5 days before abortion; aborted 22 days after x-ray |
| R. F. | 9/ 8/31 | Preg. +; nephritis | 10 weeks | 11/28/31 | 11/20/31—Pos. 11/28/31—Neg. | 11/14/31—Pos. 11/30/31—Neg. | 12/ 2/31 | F. S. H. pos. 8 days before x-ray and neg. on day x-ray was started; A-Z. neg. on 2d day of treatment; aborted 2 days after x-ray; fetus was dead before x-ray was started |
| A. S. | 2/ 8/28 | Preg. +; heart disease | 5 months | 7/ 8/28 | 9/ 1/28—Pos. | Not done | Bagged and delivered of a live fetus | F. S. H. pos. at 6½ mos.; x-ray ineffectual |
| J. C. | 11/10/31 | Preg. +; pulmonary tuberculosis | 3½ months | 2/27/32 | 2/29/32—Pos. 3/26/32—Neg. 4/ 1/32—Neg. | 2/29/32—Pos. 3/ 7/32—Pos. 3/18/32—Pos. 4/ 1/32—Neg. | 4/ 5/32 | F. S. H. neg. for 2 days after x-ray; A-Z. pos. 18 days after x-ray; aborted 37 days after x-ray |
| R. Z. | 3/20/32 | Preg. +; heart disease | 3½ months | 7/ 1/32 | 7/15/32—Neg. 8/15/32—Neg. 8/19/32—Neg. | 7/15/32—Pos. 8/10/32—Neg. 8/18/32—Neg. | 8/29/32 | F. S. H. neg. 14 days after x-ray; A-Z. pos. 14 days after x-ray; aborted 59 days after x-ray |
| S. A. | 5/27/32 | Preg. +; heart disease | 8 weeks | 7/ 6/32 | 7/15/32—Neg. | 7/ 1/32—Pos. 7/15/32—Pos. | 7/20/32 | F. S. H. 9 days after x-ray; A-Z. pos. 9 days after x-ray; aborted 33 days after x-ray |
| L. G. | 3/ 4/32 | Preg. +; cardiac | 10 weeks | 5/26/32 | 6/ 7/32—Pos. 6/22/32—Slight pos. | 6/25/32—Pos. 6/ 7/32—Pos. 6/22/32—Pos. | 7/ 3/32 | F. S. H. slightly pos. 27 days after x-ray; A-Z. strongly pos. 27 days after x-ray; aborted 38 days after x-ray |
| A. T. | 8/ 2/30 | Preg. +; congenital syphilis | 6 weeks | 9/30/30 | 12/16/30—Neg. | 12/16/30—Neg. | 12/27/30 | Aborted dead fetus 59 days after x-ray |
| A. H. | 6/28/30 | Preg. +; mitral disease | 4½ months | 9/10/30 | 1/16/31—Pos. | ..... | 1/ 8/31 | Bougie was inserted and aborted 6 months live fetus; x-ray picture showed 6 months live fetus |
| L. K. | 5/24/29 | Preg. +; mitral disease | 4½ months | 10/ 3/29 | 10/28/29—Neg. | 10/28/29—Pos. 11/ 5/29—Neg. | 11/ 9/29 | F. S. H. neg. 25 days after x-ray; A-Z. pos. 25 days after x-ray and became neg. 33 days after x-ray, 2 days before induced abortion |
| V. I. | 10/17/28 | Preg. +; mitral disease | 3 months | 1/ 6/29 | 12/27/28—Pos. 1/ 7/29—Neg. 1/14/29—Neg. 1/22/29—Neg. | ..... | 2/17/29 | F. S. H. pos. 10 days before x-ray and neg. 1 day after x-ray; aborted dead fetus 42 days after x-ray |
| L. P. | 9/ 9/32 | Preg. +; asthma | 4½ months | 1/10/33 | 1/17/33—Neg. 2/10/33—Neg. | 1/17/33—Pos. 2/10/33—Pos. 3/15/33—Neg. | 4/17/33 4½ mos. fetus | 4½ mos. gravid; fetus dead; F. S. H. neg. 1 week after x-ray; preg. neg. 2 mos. after x-ray |
| P. K. | 9/10/32 | Preg. +; psychosis | 8 weeks | 11/ 8/32 | 11/ 7/32—Neg. 11/15/32—Neg. | Blood anterior pituitary reaction II | 1/ 1/32 | Blood F. S. H. neg.; blood anterior pituitary reaction pos.; passed dead fetus |
| R. B. | 9/14/32 | Preg. +; pulmonary tuberculosis | 10 weeks | 12/ 6/32 | 12/19/32—Neg. | 12/ 9/32—Pos. 12/19/32—Pos. | 12/27/32 | Blood F. S. H. neg. 13 days after x-ray; preg. test remained pos.; aborted 3 weeks after x-ray |
| N. G. | 10/24/32 | Preg. +; cardiac disease | 3 months | 1/10/33 | 2/ 2/33—Pos. 3/ 1/33—Neg. | 2/ 2/33—Pos. 2/16/33—Pos. 3/ 2/33—Neg. | 3/ 9/33 | Blood F. S. H. and urine preg. test became neg. 50 days after x-ray |
| R. R. | 11/ 1/23 | Preg. +; spinal cord tumor | 5½ months | 2/18/26 | 4/19/26—Pos. | Not done | 4/20/26 live fetus | X-ray ineffectual; abortion induced |

dead fetuses subsequently in two, the examination of the curettings in another, and, in the fourth case, the removal of a dead abdominal pregnancy at operation. The fifth "negative" turned out at laparotomy to be an old ectopic pregnancy. There were five "positives" and, of these, one patient went on to term, two subsequently passed live fetuses, and the last two "positives" occurred in the cases of retained placenta.

allowed to go to term, two patients who later showed dead fetuses (R. S. and J. S.), and the last occurred in one of the cases of retained placenta. The one "negative" was in a case of proved missed abortion.

COMMENT

These results may be summarized as follows: The female sex hormone test was performed in thirty-one

cases in which missed abortion was suspected or expected, and in two cases of retained placenta. A negative reaction was obtained when the fetus was dead (twenty-three cases), and a positive reaction when the fetus was alive (eight cases). The five "negatives" seen at the time of, or immediately after, roentgen treatment to induce abortion must be interpreted as indicating that the fetuses were dead at the time of irradiation, an assumption not at all illogical when the fact that there were present serious medical conditions which indicated induction of abortion is taken into consideration. The conclusion to be reached is obvious: the female sex hormone blood determination may be used as an early and reliable clinical indicator of whether the fetus is alive or dead.

The summarized results of the pregnancy tests show that repeated examinations were performed in twenty-four cases. Eleven of these were or became negative when the female sex hormone test also was negative, but as has been already mentioned, in the majority, a negative pregnancy reaction was obtained at a much

(A. L. and L. F.), placentas were retained. In both, the female sex hormone tests were positive and subsequently the structures passed were found to be in a fresh state and recently separated from the uterine wall. The explanation for the rapid disappearance of the female sex hormone, as compared to the prepituitary in missed abortion, apparently lies in the fact that the increase of the former both in the placenta and in the blood in pregnancy is not nearly as great as the increase of the latter. Consequently, injury to the placenta results in rapid diminution of the quantity of female sex hormone to a nondemonstrable level. The prepituitary-like hormone, however, present in much greater quantities, takes much longer to disappear. Also, the presence of viable chorionic villi, as has been demonstrated,⁹ supplies sufficient hormone, in spite of fetal death, to give persistently positive tests.

SUMMARY AND CONCLUSIONS

1. Thirty-three pregnancy cases in which missed abortion was suspected or expected were studied from

TABLE 2.—Other Cases

| Name R. S. | Last Menstrual Period | Diagnosis | Size of Uterus | Female Sex Hormone | Pregnancy Test | Aborted | Summary |
|---------------|-----------------------------|------------------------|--------------------------------------|-----------------------|-------------------|--------------------------------|---|
| | 5/28/30 | Toxemia of pregnancy | 7 months; no fetal heart heard | 1/20/31—Neg. | 1/20/31 | Dead fetus | Toxemia with 7 mos. gravidity; F. S. H. neg.; preg. test pos.; passed dead fetus spontaneously |
| M. R. | 9/18/27 | Inevitable miscarriage | 5 months | 12/17/27—Pos. | Not done | 12/18/27 | Passed live fetus |
| E. R. | ..... | Ectopic pregnancy | ..... | 3/ 9/27—Neg. | Not done | Ectopic (old), at operation | Ectopic preg.; microscopically old villi seen; F. S. H. neg. |
| I. N. | 3/12/26 | Missed abortion | 3 months | 11/10/26—Neg. | Not done | 12/10/26 | Uterus remained 3 mos. in size after 7 mos. amenorrhea; passed dead 3 mos. fetus; F. S. H. neg. |
| A. B. | 7/17/30 | Missed abortion | 10 weeks | 3/ 3/31—Neg. | 3/3/31—Neg. | 3/9/31 curetted | Uterus remained 3 mos. in size after 8 mos. amenorrhea; F. S. H. and preg. tests neg.; on curettage old preg. found |
| B. B. | 8/ 6/30 | Threatened abortion | 3½ months | 12/18/30—Pos. | Not done | 12/20/30 | F. S. H. pos.; passed live fetus |
| J. S. | 4/ 7/29 | Abdominal pregnancy | 5 months' fetus by x-ray | 9/23/29—Neg. | 9/23/29—Pos. | 10/14/29 operated | Dead abdominal preg.; F. S. H. pos.; urine preg. test negative |
| A. L. | 7/27/26 | Retained placenta | Term | 5/26/27—Pos. | Not done | 5/27/27 placenta passed | F. S. H. pos.; retained placenta, fresh when passed 1 day after test |
| L. F. | ..... | Retained placenta | 4 months | 3/26/21—Pos. | 3/26/31—Pos. | 3/27/31 | Retained placenta at 4 mos.; passed fresh placenta 1 day after test was done |
| L. G. | 6/15/32 | Preg. +; fibroids | 3 months | 11/18/32—Pos. | 11/18/32—Pos. | Went on to term | Seen in follow-up, 12/7/32; felt live; uterus corresponds to 6 mos.; F. S. H. and A-Z. pos.; patient went to term |

later date. In ten cases, positive urine pregnancy reactions persisted when the female sex hormone determinations were negative. In all of these, dead fetuses were subsequently found. Three cases showing positive pregnancy tests checked with similar positive female sex hormone tests. All of these showed live fetuses. It is to be emphasized that never was a negative urine pregnancy reaction obtained when the fetus was alive, but on the other hand in about 50 per cent of cases positive reactions were present in spite of the death of the fetus. The conclusion to be reached is that when a dead fetus is suspected the pregnancy test is of great value in cases that show a negative response, but a positive reaction is of no value since it may mean either a live or a dead fetus. As can be seen, the pregnancy test is not nearly as sensitive an indicator of the presence or absence of a dead fetus as the female sex hormone blood determination.

The modus operandi in both reactions is of considerable interest. The rapid disappearance of the female sex hormone and, to a lesser extent, of the prepituitary-like hormone in cases of missed abortion draws attention to the production center of these two hormones, the placenta. In two of the patients studied

the hormonal aspect in order to determine the relationship between the female sex hormone of the blood and the prepituitary hormone of the urine on the one hand, and fetal life or death on the other.

2. The Frank-Goldberger method was used in the blood studies, and either the Aschheim-Zondek or the Friedman test in the urine studies.

3. A negative female sex hormone reaction was obtained when the fetus was dead (twenty-three cases) and a positive reaction when the fetus was alive (eight cases). The results here were 100 per cent correct.

4. A negative pregnancy reaction was obtained when the fetus was dead in eleven cases, and ten cases gave positive reactions in spite of dead fetuses (approximately 50 per cent correct).

5. The female sex hormone blood determination has proved itself in our small series an absolute indicator of whether a fetus is alive or dead. The urine pregnancy test is of value only when the reaction is negative.

6. The presence or absence of the hormones depends on the degree of involution of the placenta and its attachment to the uterine wall.

145 West Eighty-Sixth Street—10 East Eighty-Fifth Street.

METHYLENE BLUE SOLUTIONS IN
POTASSIUM CYANIDE
POISONING

REPORT ON CASES 2 AND 3

J. C. GEIGER, M.D.
Director of Public Health
SAN FRANCISCO

Attention has recently been drawn to the apparently successful treatment of a case of cyanide poisoning by the use of a 1 per cent methylene blue solution in water, injected intravenously.¹

REPORT OF CASES

CASE 2.—H. L., a white man, aged about 25, swallowed two number 0 capsules of potassium cyanide in an attempt at suicide; he stated this fact to an official of the Y. M. C. A. in the lobby of that organization's hotel and immediately collapsed. A call was placed with the Central Emergency Hospital for an ambulance. These events occurred between 4:35 and 4:40 p. m., May 18, 1933.

The patient was brought into the Central Emergency Hospital and placed on the table in the treatment room at 4:45 p. m., in an unconscious state, marked cyanosis, body rigid, with clonic spasm of the voluntary musculature, pupils dilated and inactive to light, respirations 12 per minute, of stertorous character, pulse feeble at a rate of about 160 per minute. The odor of cyanide was evident from the respired air.

Respiration ceased during the preparation of the methylene blue solution, and artificial respiration was administered and continued during the injection of methylene blue, which was given by Dr. R. J. Millzner, assistant surgeon. Improvement was evident, with a decrease in the depth of the cyanosis, a lowering of the pulse rate and a partial return to consciousness. Gastric lavage with warm water was begun and continued through 2½ gallons. The odor of cyanide was present in the washings, which contained no food particles. Normal spontaneous respiration returned at the rate of 10 per minute, shortly increasing to 28 per minute. The pulse rate was of better quality, at a rate of from 132 to 144 per minute. With these signs of improvement, but also because of the fact that it was quite definite that a comparatively large amount of cyanide had been taken (two number 0 capsules), a second injection of methylene blue was begun at 5:08 p. m. This was followed by a momentary return of cyanosis and an elevation of the pulse rate from 132 to 144. Carbon dioxide oxygen (carbogen) was given. Return to complete consciousness was rapid, with clearing of cyanosis, normal respiration, and stabilized pulse rate of about 112 to 128 per minute. The patient vomited a greenish tinged fluid, during which there was some distress. An attempt to pass a stomach tube for lavage with sodium thiosulphate solution resulted in placing only about 200 cc. of the solution, and this probably accounts for the emesis.

There was no further discomfort or complication during the forty-eight hour stay in the hospital. Methylene blue was first noticed in the urine at 7 p. m., approximately two hours after the first injection. There was no elevation of temperature above 98.8 F.; the pulse rate dropped gradually to a level of from 78 to 86, and respirations returned to 20 and 18 per minute.

A specimen of blood was obtained a short period after the second injection of methylene blue, in an effort to learn of the possibilities of the formation of methemoglobin. Laboratory study failed to reveal the presence of this substance.

Approximately 0.0416 Gm. of cyanide was found in the washings from the stomach. If the patient swallowed two number 0 capsules, he must have absorbed approximately 1.1 Gm., or 16.4 grains, of the poison.

CASE 3.—E. M., a white man, aged 57, at 9:30 p. m., May 30, ate a banana which had been split and between the two halves of which he had allegedly placed enough potassium cyanide to equal a heaping teaspoonful. On repeated questioning of the

patient after recovery, the statement as to the approximate amount of cyanide consumed with the banana was confirmed. The potassium cyanide was taken from a quarter-pound can purchased in a local drug store. From the contents of the can, which was found in the patient's pocket, this amount could be considered substantially correct. Therefore, the quantity consumed by actual weight was approximately 100 grains (6.5 Gm.).

Since the condition of the patient on arrival in the Park Emergency Hospital was such that washing of the stomach contents was not resorted to, the extraordinary amount stated to have been consumed must have been absorbed.

The patient was brought into the hospital at 9:47 p. m., seventeen minutes after taking the poison. On arrival in the hospital, there was marked cyanosis and complete unconsciousness; the pupils were dilated; breathing was extremely difficult and rapid, with a barely perceptible pulse, and a typical odor of cyanide on the breath. Respiration was becoming increasingly labored when the first methylene blue solution was administered at 9:55. A second injection, making 100 cc. in all, was given at 10:30. Between the two injections the patient became conscious, complained severely of pain in the calves of both legs, and talked rationally.

Other than an elevation of temperature to 99.5 F. for only a short while, recovery has been apparently complete.

A specimen of blood, obtained after the second injection of methylene blue, on examination was negative for methemoglobin.

These cases demonstrate three important facts:

1. Methylene blue, intravenously, is useful, definitely beneficial and successful in the treatment of cyanide poisoning.

2. The dye can be used in quantities up to 100 cc. of a 1 per cent solution (1 Gm. of the dye) within a period of one-half hour without untoward symptoms.

3. The use of methylene blue, even to the extent of 100 cc. of the 1 per cent solution (1 Gm. of the dye) did not produce measurable quantities of methemoglobin in the blood of these particular cases.

SALMONELLA SUIPESTIFER INFECTIONS
IN MAN

FURTHER OBSERVATIONS

ANN G. KUTTNER, M.D.

AND

H. D. ZEPP, A.B.

BALTIMORE

In recent years, an increasing number of sporadic cases of *Salmonella suipestifer* infections in man,¹ not associated with outbreaks of food poisoning, have been reported in all parts of the world. In the great majority of instances, the source of the infection has remained undetermined, and no definite relationship to infected pigs or pork could be established.

These cases have presented an extremely varied clinical picture: in some the signs and symptoms suggested bronchopneumonia, in others typhoid. In some

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Dr. Kuttner was aided by a grant from the Henry Strong Denison Fund.

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instances *Salmonella suipestifer* infection was found as a postoperative complication, and in children pyarthrosis has been reported by several observers.² The diagnosis was made by blood culture in all the cases except those of arthritis. In the latter, *Salmonella suipestifer* was grown from the pus aspirated from the affected joint. In one instance this organism has been isolated from the spinal fluid of a case of chronic meningitis.³ In 1932 we reported from the Harriet Lane Home, Johns Hopkins Hospital, a series of seven cases of *Salmonella suipestifer* septicemia in children varying in age from 7 months to 6 years.³ Four of the patients were admitted with a preliminary diagnosis of typhoid, one had bronchopneumonia, one had congenital syphilis, and one had had an abdominal operation. The organism was isolated by blood culture in every instance. The disease was relatively mild. None of the children developed complications, and all of them made good recoveries.

During the course of 1932-1933, we have observed four more cases of *Salmonella suipestifer* infection: three in children and one in an adult. The clinical observations in these cases differed greatly from those previously described by us, and in one of them death occurred. It seemed of interest, therefore, to report these cases in detail in order to emphasize the increasing prevalence of this infection in Baltimore, and the varied clinical picture it may assume.

REPORT OF CASES

CASE 1.—L. E., a Negress, aged 28, living in Baltimore, was admitted to the nose and throat service, Aug. 29, 1932, with a diagnosis of nasal polypi, chronic ethmoiditis, bilateral chronic maxillary sinusitis and chronic tonsillitis. The patient had been suffering from sore throat for several months but had no other complaints. On physical examination she was found to have a few scattered râles at the left base but was considered in good condition for general anesthesia. August 30, a bilateral nasal ethmoid and sphenoid operation was performed. The patient stood the operation well and had no fever. September 1, a bilateral radical antrum was done. Pus was obtained from the left antrum, which on culture showed alpha streptococci.

The patient developed fever following operation, ranging from 102 to 103 F. She had no complaint except headache. Physical examination was negative except for coarse râles at the left base. White blood cells numbered 7,600; polymorphonuclears, 64 per cent; lymphocytes, 36 per cent. The urine showed from 5 to 15 white blood cells in a high power field in the centrifuged specimen.

September 4, the white blood count was still 6,400, with the temperature ranging from 103 to 105. Some frequency of urination was noted. A catheterized specimen of urine showed from 3 to 5 white blood cells per high power field. Urine culture yielded *Staphylococcus aureus*.

September 6, the patient complained of dysuria and began to cough.

September 7, the percussion note at the left base was impaired and the temperature was still high. The patient was transferred to the medical service. Blood cultures taken September 3 and 4 were both positive for *Salmonella suipestifer*, group II. There was no brachycardia. There were no rose spots. The tip of the spleen was barely palpable on one occasion. The patient's temperature remained hectic from the 1st to the 13th, when it gradually became normal. The cough continued. Dysuria and frequency persisted.

September 9, a catheterized specimen of urine showed 100 white blood cells per high power field. Urine cultures, September 8 and 12, showed almost pure cultures of *Salmonella suipestifer*. Roentgen examination revealed the left base hazy, probably because of thickened pleura; the lungs otherwise were clear. Cultures from the sinuses, nose, throat and stool were negative for *Salmonella suipestifer*.

September 15, serum agglutinations were negative for typhoid, paratyphoid A and paratyphoid B. They were positive for *Salmonella suipestifer*, group II, 1:80. They were positive for a homologous organism, 1:160. The Wassermann reaction was negative. The white blood count was consistently low, from 9,350 to 4,700. As the pyuria cleared, the dysuria disappeared. Urine cultures became negative for *suipestifer*. Blood cultures, September 12, were negative. Renal function was normal. Serum obtained October 12 agglutinated the homologous strain in a dilution of 1:160 and a known porcine strain of *suipestifer* (group II) in a dilution of 1:640. The patient was discharged, October 12, six weeks after admission.

The final diagnoses were: 1. Chronic pansinusitis. 2. Septicemia, *Salmonella suipestifer*. 3. Cystitis, *Salmonella suipestifer*. 4. Questionable bronchopneumonia, left base.

CASE 2.—R. G., a Negro boy, aged 2 years, living in Baltimore, was admitted Jan. 16, 1933, with a diagnosis of bronchopneumonia. The patient's past history was negative. He became ill suddenly, Dec. 28, 1932, nineteen days before admission, with cough, fever and rapid, grunting respirations. A doctor was called, who made a diagnosis of pneumonia. A public health nurse visited him daily, until the day of admission. He remained very sick during the nineteen days prior to admission with a temperature fluctuating from 105 to normal. His cough continued, and he vomited occasionally.

On admission, the temperature was 102, respiration 32, pulse 96. The patient was acutely ill, anemic and malnourished and was in marked respiratory distress. He was unable to breathe except in an upright position. Respirations were shallow and grunting, with dilatation of the alae nasae. The sclerae were slightly icteric, and there was slight cyanosis. There were no rose spots. The tonsils were enlarged; the pharynx was edematous. Both lung bases were dull to percussion; the breath sounds were suppressed and tubular in character. Fine and coarse râles were heard. Both apexes were relatively clear. Fluoroscopic examination showed patchy consolidation at both bases. The heart was enlarged to the right; the sounds were of fair quality, with no murmurs. The abdomen was not distended. The liver was enlarged 4 cm. below the costal margin. The tip of the spleen could be just felt. There was no swelling or tenderness of the extremities. Neurologic examination was negative.

On admission, the red blood cells numbered 2,150,000; hemoglobin was 35 per cent; white blood cells, 17,400. The differential count showed: polymorphonuclears, 42 per cent; lymphocytes, 52 per cent. There were no sickle cells. Platelets, numbered 150,000. The bleeding time was not prolonged. Examination of the urine was negative, except for a trace of diacetic acid. Throat culture revealed type III pneumococcus. The Wassermann reaction was negative.

Because of the signs of heart failure, the patient was given digitalis, with some improvement. Three days after admission, January 19, he received a small transfusion, without any reaction. The following day he seemed slightly better, the heart had decreased in size, and the temperature was 100.4. A second transfusion was performed on the twenty-first. The following day he vomited coffee ground material, the stools and sputum were streaked with blood, the urine was grossly bloody, and his gums were bleeding. There were petechiae on the hard palate.

January 22, the red blood cells numbered 3,800,000; hemoglobin was 50 per cent; white blood cells numbered 7,500; reticulocytes, 18 per cent. The bleeding time was twenty-seven minutes, the clotting time four and one-half minutes. Platelets were completely absent. Blood cultures taken January 16, 18 and 19, were all positive for *Salmonella suipestifer*, group II. Serum obtained on the 23rd showed no agglutinins for *Salmonella suipestifer*. The patient was given three more transfusions but the bleeding continued, and the patient died,

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3. Kuttner, A. G., and Zepp, H. D.: Paratyphoid-Like Fever in Children Due to the *Salmonella suipestifer* Group, *Bull. Johns Hopkins Hosp.* 51: 373, 1932.

4. This case is included through the courtesy of the medical department.

January 25, nine days after admission. Stool obtained on the 25th was positive for suipestifer, group II. Postmortem blood culture was positive for suipestifer, group II. Postmortem lung puncture yielded *Bacillus influenzae* and pneumococcus, type III, negative for suipestifer. The postmortem spinal fluid was sterile.

Autopsy revealed purpura with hemorrhage into the tonsils, lymph nodes, pericardium, endocardium, kidneys, pelves of the kidneys, ureters, spleen, bladder, suprarenals, testes, stomach and intestine.

The lungs, on gross examination, had a thick, fibrinous exudate over both bases. Both lower lobes felt solid, and on section areas of denser consolidation surrounded all the small bronchioles.

Microscopic examination showed the bronchi filled with exudate, consisting mainly of polymorphonuclears and fibrin. The walls of the bronchioles were thickened and infiltrated with mononuclears. The alveoli in many places were filled with edema fluid, some polymorphonuclears and fibrin. The typical picture of interstitial bronchopneumonia was presented, characteristic of pneumonias caused by viruses. In spite of careful search, no inclusion bodies were found. Two postmortem lung punctures showed pneumococcus, type III, and influenza bacilli, but no *Salmonella* suipestifer, in spite of the fact that this organism was present in the blood. No evidence was obtained, therefore, that *Salmonella* suipestifer was the etiologic agent responsible for the pneumonia.

Focal necroses in the liver resembled those found in typhoid.

Aside from hemorrhages, no lesions were found in the intestine.

CASE 3.—J. S., a Negro boy, aged 19 months, living in Baltimore, was admitted, Feb. 21, 1933, with a diagnosis of pyarthrosis. The family and past histories were negative.

The patient was well until February 7, two weeks before admission, when he lost his appetite and did not appear to be doing well. February 15, six days before admission, he bumped his left knee and complained that it hurt, although the mother could not see any swelling or redness. The following day, February 16, the knee began to swell and the patient felt feverish. He limped for two days until February 18, three days before admission, when he refused to stand on his left leg. The fever continued. He was seen in the dispensary two days before admission, February 19, when he had a temperature of 103. He was found to have pharyngitis. The soft tissue of the left thigh and knee were swollen and tender. The impression at that time was that the condition was cellulitis. He failed to improve, and the fever continued. The patient was brought to the dispensary, February 21, and 10 cc. of greenish purulent pus was aspirated from the left knee joint. He was admitted on the same day.

On admission, the temperature was 103.6. The patient was well nourished, irritable and alert, and did not appear particularly sick. He lay with his left knee slightly flexed and externally rotated. Physical examination revealed enlargement of the cervical lymph nodes, the tonsils and pharynx injected and edematous, and a slight mucopurulent posterior nasal discharge. The heart was not enlarged; the rate was rapid. The liver and spleen were not felt. The left knee was diffusely swollen, hot, and tender on palpation and passive movement. There was fluctuation within the joint.

Laboratory examination revealed: hemoglobin, 75 per cent; white blood cells, 28,040; polymorphonuclears, 64 per cent; platelets, abundant. The urine was normal. The Wassermann reaction was negative. Blood culture on the day of admission was sterile. Culture from the pus aspirated from the left knee yielded *Salmonella* suipestifer, group II.

The knee was aspirated every day from the 21st to the 25th, inclusive, from 3 to 10 cc. being obtained. The knee was put in traction on the 23d, two days after admission. The patient's temperature was lower, the second week in the hospital, but it was still necessary to aspirate the knee every other day, sometimes as much as 20 cc. of purulent material being obtained. The patient had a pharyngitis during most of his stay in the hospital, but two throat cultures failed to show either suipestifer or beta streptococci. All the cultures made from the pus aspirated from the joint showed *Salmonella* suipestifer until

March 17, twenty-five days after admission, when the culture was negative. No further aspirations were done after this date, the swelling subsided gradually, and passive exercise was started, March 25. Traction was discontinued, March 28. There was only slight limitation of extension and the patient was able to bear weight on his leg fairly well, although he had a marked limp. Two roentgenograms failed to show any damage to the bones. The patient's serum agglutinated the homologous organism in a dilution of 1:160. The stool was negative for suipestifer. As in the majority of the other cases of *Salmonella* suipestifer infection, no source of infection was found. No other member of the family was sick and there were no butchers or farm workers in the family. The mother's serum failed to agglutinate the organism isolated from the patient.

The patient was discharged, April 9, after seven weeks in the hospital. Serum obtained one month after discharge, May 6, agglutinated the homologous and other strains of *Salmonella* suipestifer, group II, in a dilution of 1:160.

CASE 4.—F. W., a white girl, aged 5 weeks, living in Fullerton, Md., was admitted, April 8, 1933, with a diagnosis of arthritis. There was no history of syphilis or gonorrhea. The patient was breast fed. The mother gave a history of having had a breast abscess, which was healed at the time of admission. The patient had nursed from the infected breast, but the nature of the infection was not known. The patient had been entirely well until ten days before admission, March 29, when



Subluxation of right shoulder; evidence of fluid in joint; osteomyelitis of right humerus.

the mother noticed that the infant was not moving her right arm and cried when it was touched. The patient had no fever and did not seem sick. No swelling was noted, until the day before admission, April 7, when the mother noticed that the right shoulder joint was swollen but not hot or red.

On admission the patient was well nourished and the infant did not appear acutely ill, temperature was normal. She did not move her right arm and cried when it was handled. There was no general glandular enlargement; the epitrochlears were not felt. The eyes were normal. The pharynx was slightly red. The heart and lungs were normal. The spleen was easily palpable. There was no vaginal discharge. The right shoulder joint was swollen; there was slight local heat but no redness. The other joints were normal.

Laboratory examination revealed red blood cells, 3,900,000; hemoglobin, 94 per cent; white blood cells, 22,600; polymorphonuclears, 46 per cent; lymphocytes, 64 per cent. Platelets were abundant. The urine was normal.

Attempts to aspirate the joint the day of admission failed. The patient remained afebrile and took her feedings well. A roentgenogram of the right shoulder, April 10, showed fluid in the joint and an area of destruction at the upper end of the humerus. Blood cultures taken, April 10 and 13, were negative.

April 13, the shoulder was again aspirated and 0.5 cc. of thick pus obtained. A smear showed gram-negative bacilli. A culture yielded *Salmonella* suipestifer, group II. Serum obtained from the patient on the same date failed to agglutinate typhoid, paratyphoid A and B or *Alcaligenes melitensis*; agglutination with *Salmonella* suipestifer, group II, was positive in a dilution of 1:320.

Repeated stool and urine cultures have been negative for *Salmonella suipestifer*. The patient's shoulder was immobilized for three weeks. The swelling has decreased and the patient is improving gradually.

The serum of the patient's parents was tested for agglutinins for *Salmonella suipestifer*. The father's serum was negative, but the mother agglutinated the organism isolated from the patient in a dilution of 1:80. The family live in the country but do not keep pigs.

BACTERIOLOGY

The cultures isolated from these patients were gram-negative motile bacilli that fermented dextrose, mannite, maltose, rhamnose and xylose with the production of gas and failed to ferment lactose, saccharose, arabinose, trehalose and inositol. They all produced blackening on lead acetate mediums. These organisms were not agglutinated or agglutinated only in low dilutions by paratyphoid B serum but agglutinated well in serums produced by the injection into rabbits of group II *Salmonella suipestifer* of human and porcine origin. They failed to agglutinate in immune serum produced by the injection of the specific phase of *Salmonella suipestifer*, group I. These cultures were identical with *Salmonella suipestifer*, group II, cultures isolated by us³ in 1932. The virulence of the cultures was tested by injecting 0.01 and 0.001 of a twenty-four hour broth culture subcutaneously into rabbits. All the cultures proved to be virulent, killing rabbits in from six to fifteen days.

COMMENT

Four more cases of *Salmonella suipestifer* infection in man have been reported: one in an adult and three in children. The adult developed a *suipestifer* septicemia and cystitis, following a radical antrum operation. Two of the children had arthritis and one of them showed osteomyelitis. The other child developed a *suipestifer* septicemia accompanied by severe purpura, during the course of bronchopneumonia. No complications such as arthritis, osteomyelitis, cystitis and purpura were observed in the group of cases reported by us³ in 1932. It is of interest that this organism, *Salmonella suipestifer*, group II, can produce arthritis and osteomyelitis unaccompanied by fever (case 4). Nabarro and his associates⁴ described a similar case in England in an infant, aged 8 months, due to *Salmonella suipestifer*, group I.

Purpura has been observed as a rare complication in paratyphoid B fever.⁵ In none of the cases of *suipestifer* infection in man that we have been able to find in the literature has severe purpura with complete disappearance of platelets been described (case 2). Since purpura is a common symptom of pigs infected with the hog cholera virus, it was thought possible, in view of the interstitial bronchopneumonia found at autopsy, that in this patient *Salmonella suipestifer* might have been associated with the virus of hog cholera. Unfortunately, no experiments to determine the presence of the virus were undertaken. On the other hand, it is entirely possible that the purpuric manifestations were merely the result of a severe infection in a debilitated child and that some virus other than that of hog cholera was responsible for the pathologic picture in the lung. None of the other cases showed any evidence of purpura, and their platelet counts were entirely normal.

Three of the patients live in Baltimore; one lives in the country. In no instance was any association with infected pigs established, and none of the cases had

any contact with each other. There was no history of a similar illness in any other member of the family, although the mother of one of the patients agglutinated the organism isolated from her daughter.

The organisms isolated from these four cases all belong to group II, *Salmonella suipestifer*, although group I is generally considered the American type, most commonly associated with hog cholera in this country. In recent years, however, group II has been associated with increasing frequency from infected pigs in the United States.⁶ In 1932 our observations were similar: six of the seven cases reported belonged to group II.

MENINGOCOCCIC MENINGITIS IN INFANCY

REPORT OF CASE

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AND
NELLES SILVERTHORNE, M.B. (Tor.)
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This report embodies the observations of meningococcic septicemia with meningitis in a 22-day old infant with a diagnosis correctly made within twenty-four hours of the onset, immediate, adequate serum therapy given by the most desired routes, and early recovery. Very few cases reported in the literature at this early age have been found. A case has been reported by McLean and Caffey¹ in a 23-day old infant. An individual may be susceptible at any age, since the youngest patient in whom the condition has been recorded is the present one, and the oldest is a woman of 61 years.² Holt and Howland,³ in their textbook, state that "the youngest case we have seen was in an infant 5 weeks old." These authors also remark that 12 per cent of patients were under 1 year. Ker⁴ points out that 14 per cent of his patients were under 1 year of age.

REPORT OF CASE

History.—J. R., a girl baby, aged 22 days, admitted to the hospital, May 15, and discharged, May 29, 1933, was sent into the hospital by one of us (A. B.) with a diagnosis of meningitis, which was made by observing carefully the few physical signs that were present.

Fever, vomiting, irritability and anorexia had been present for from twelve to twenty-four hours. There were six contacts, all adults, two of them with head colds. Otherwise the family history was negative. The child had been delivered with forceps but had been perfectly normal since birth. She had nursed since birth and no other feeding had been necessary. The baby was apparently quite healthy until the day before admission, when she became feverish and drowsy. She nursed poorly and vomited once on the day of admission.

Examination.—The infant was well nourished and developed. She was quite drowsy and was irritable on being disturbed. The anterior fontanel was tense, with a feeling of increased pressure yet not definitely bulging. Occasional quick lateral nystagmoid movements of the eyes were noted. No rash or petechiae were seen. Examination did not reveal the slightest sign of nuchal rigidity. Kernig's sign was positive bilaterally, although this is not always reliable in a new-born infant as a diagnostic criterion of meningitis. Otherwise, the physical examination was negative.

6. Tenbroeck, Carl: Personal communication to the authors. From the Wards of the Hospital for Sick Children, Department of Paediatrics and Connaught Laboratories, University of Toronto.
1. McLean, Stafford, and Caffey, J. P.: *Endemic Meningococcus Meningitis*, Am. J. Dis. Child. 35: 357-387 (March) 1928.
2. Unpublished reports.
3. Holt, L. E., and Howland, John: *Diseases of Infancy and Childhood*, ed. 9, New York, D. Appleton & Co., 1926.
4. Ker's *Infectious Diseases*, ed. 3, New York, Oxford University Press, 1929.

5. Jameson, H. P., and Signy, A.: A Case of Paratyphoid B Infection with Purpura and Specific Bronchopneumonia, Arch. Dis. Childhood 3: 238 (Oct.) 1928.

Lumbar puncture revealed a high cell count and many intracellular and extracellular gram-negative diplococci. Some were seen as a single coccus.

A provisional diagnosis of meningococcic meningitis was made.

Progress.—The temperature on admission was 105 F., varying around 100 to 103 for eight days and finally falling by lysis to normal toward the day of discharge. The baby seemed much the same as on the first day of hospitalization, when on May 18, three days later, general improvement was noticed, as manifested by a better appetite, less irritability and noticing the surroundings. The condition remained much the same until May 22, when a definite neck rigidity was noticed. From this time on the baby gradually improved until all observations were negative on the day of discharge. It will be seen in the table that the cerebrospinal fluid taken at lumbar puncture was sterile for the first time on the ninth day following hospitalization.

The white blood cell count was 14,300, with 76 per cent polymorphonuclear leukocytes. Hemoglobin was 80 per cent. The urine was normal. The intracutaneous tuberculin test was negative. Blood culture and a nasopharyngeal swab was positive for meningococci on admission.

Treatment.—On the first day of admission, within half an hour, specific antimeningococcic serum was administered, which on later test proved to agglutinate in high titer the infecting meningococcus. This serum was given intravenously on the first and third days of hospitalization in approximately 70 cc. of 5 per cent dextrose in physiologic solution of sodium chloride. Usually when intravenous therapy is given, the con-

Observations on the Cerebrospinal Fluid

| Day | Amount, Cc. | Pressure | Appearance | Cells | Poly-morpho-nuclears, per Cent | Smear | Culture | Anti-meningo-coccle Serum, Cc. |
|------------|-------------------|-----------|-----------------|-------|--------------------------------|-------|---------|--------------------------------|
| 1 | 12 | ++ | Cloudy | 6,000 | 95 | + | + | 12 I.V. 12 I.T. |
| 2 | 25 | + | Cloudy | 8,400 | 90 | + | + | 15 I.T. |
| 3 | 15 | + | Turbid | 6,600 | 90 | + | + | 15 I.V. 10 I.T. |
| 4 | 10 | ± | Cloudy | 5,300 | 90 | + | + | ..... |
| 5 | 10 | Decreased | Cloudy | 6,000 | 92 | + | — | 12 I.T. |
| 6 | 16 | Decreased | Cloudy | 4,200 | 90 | + | — | 10 I.T. |
| 7 | 12 | Decreased | Cloudy | 5,250 | 90 | + | — | 9 I.T. |
| 8 | No puncture done | | | | | | | |
| 9 | 10 | Decreased | Cloudy | 3,000 | 90 | — | — | 10 I.T. |
| 10 | 12 | Decreased | Cloudy | 3,500 | 90 | — | — | 10 I.T. |
| 11 | 14 | Decreased | Cloudy | 2,800 | 85 | — | — | 10 I.T. |
| 12 | No puncture until | | | | | | | |
| 15 | 10 | Decreased | Slightly turbid | 900 | 75 | — | — | 27 I.V. 98 I.T. |
| Total..... | | | | | | | | 125 cc. |

* I.V., Intravenously; I.T., Intrathecally.

tinuous intravenous drip method is employed, with serum administered in dextrose and saline solution.⁵ In this case the infant was too young, so that ordinary intravenous therapy was given. Daily lumbar puncture was performed, with drainage of spinal fluid and administration of antimeningococcic serum.

COMMENT

We believe that early diagnosis, together with more intensive and adequate serum therapy by early use of the intravenous and intrathecal routes will materially reduce the mortality rate in this disease. It is currently believed that there is a great tendency for a block to occur at the base of the brain in very young infants and that cisternal and ventricular punctures may be necessary. We should like to emphasize the fact that, by the use of continuous intravenous therapy with serum, or, in very young infants, the ordinary administration of intravenous fluid, with serum, one tends to increase the amount and flow of cerebrospinal fluid.

SUMMARY AND CONCLUSIONS

1. A 22-day old infant had meningococcic septicemia with meningitis.
2. Sterilization of the spinal fluid occurred nine days after onset.
3. The infant was discharged from the hospital cured in fifteen days.
4. The intravenous route was used on the first and third days for the administration of antimeningococcic serum. The intrathecal route was used daily.

THE FORM OF THE STOOL AS A CRITERION OF LAXATION

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AND
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It has been well established that one of the important functions of the large intestine is to dehydrate the food residues received from the small bowel in preparation for elimination by the act of defecation. Burnett¹ has made this the basis of a test for what he calls intestinal indigestion and has suggested that the ability to form a hard stool made up of numerous smaller parts called *fecal units* indicates that the large intestine is in excellent condition; cases were described in which the shape of the stool was changed by dietary means from a "soft and formless" type to a "unit basis" with concomitant improvement of health. He also reported on the rate of passage of food residues through the alimentary tract, his method being to study the time required for practically all of a 50 cc. quantity of millet seed to be eliminated. As a result of such tests, Burnett was led to believe that the normal intestinal rate is from 62 to 130 hours, a period much longer than is generally accepted. This point of view was favored by Alvarez and Freedlander,² who studied the time required for the passage of glass beads. The numerous experiments of Hoelzel,³ however, who used not only millet seeds and glass beads but also gold, silver and rubber balls, steel ball bearings and other materials, have helped to explain these unusual results of Burnett and of Alvarez and Freedlander. Hoelzel wrote that "rates of passage more or less proportional to the specific gravity of the test materials were found, the heavier materials passing slower than light materials." Concerning Burnett's use of millet seed, Hoelzel stated that the ingestion of a 50 cc. quantity actually delayed intestinal passage about twelve hours and that "Burnett's method therefore is misleading rather than advantageous."

During the past few years we have had the opportunity of studying the value of bran as a laxative for men and have made observations not only on normal individuals⁴ but on a group of patients⁵ as well. In

From the Departments of Physiological Chemistry and of Internal Medicine, Yale University School of Medicine.

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2. Alvarez, W. C., and Freedlander, B. L.: The Rate of Progress of Food Residues Through the Bowel, J. A. M. A. 83: 576-580 (Aug. 23) 1924.

3. Hoelzel, Frederick: The Rate of Passage of Inert Materials Through the Digestive Tract, Am. J. Physiol. 92: 466-497 (March) 1930.

4. Cowgill, G. R., and Anderson, W. E.: Laxative Effects of Wheat Bran and "Washed Bran" in Healthy Men: A Comparative Study, J. A. M. A. 98: 1866-1875 (May 28) 1932.

5. Cowgill, G. R., and Sullivan, A. J.: Further Studies on the Use of Wheat Bran as a Laxative: Observations on Patients, J. A. M. A. 100: 795-802 (March 18) 1933.

5. Brown and Tisdall: Common Procedures in Paediatrics, ed. 3.

our study the men subsisted on carefully controlled diets of a known roughage content, all the foods being analyzed for crude fiber. The total fiber content of the food was taken as a measure of the amount of roughage ingested. Charcoal and carmine were the only materials other than the foods taken in these experiments, and they were ingested only in small quantities sufficient to mark the residues from the meals eaten at the beginning and end of experimental periods of at least seven days' duration. We feel, therefore, that our observations were made under conditions in which the influence of any inert or non-nutritive foreign substance was practically negligible. In other words, the laxative performances exhibited by our human subjects were almost entirely attributable to the foods and test substances ingested.

Reference has already been made to the unusually long periods of passage of food residues through the alimentary tract reported by Burnett and Alvarez. It seems pertinent, therefore, to call attention to the results obtained in our investigations in which laxation was studied in twenty men over periods of from at least a month to as many as sixty-two days.⁶ Our



Fig. 1.—Specimen passed by E. W. S. while subsisting on the basal diet only. This is an example of the hard, fecal-unit type of stool. Record of subjective impressions describes it as "very painful and difficult."

observations support the more general view held by gastro-enterologists, roentgenologists and others that, under "normal" laxative conditions, interpreted subjectively as "satisfactory," food residues require from about sixteen to twenty-four hours to traverse the alimentary tract.

In the course of our work we became impressed with the importance of purely subjective criteria of laxation; namely (a) the ease with which defecation takes place, and (b) the presence or absence of a sense of complete emptying at the time the dejecta are passed. Our records indicate that the passage of stools of the definitely fecal-unit type, described by Burnett, is a disagreeable, often painful, process and is associated subjectively by the individual with constipation. Figure 1 illustrates this. The fecal-unit type of stool is also the type observed clinically in cases of spastic constipation and mucous colitis and is produced by hospital patients subsisting on liquid or "soft" diets; its small hard character is probably due to a too prolonged dehydrating action of the colon on too small an amount of indigestible food residue.

Our series of photographs contain many illustrations of the different types of stools described by Burnett. The records of subjective impressions show that a fairly large, sausage-shaped stool, with few or no markings indicative of so-called haustral contractions, is usually easy to pass and its elimination is generally



Fig. 2.—Specimen passed by M. L. P. while ingesting the basal diet plus a processed bran product. The large, sausage-shaped stool was characteristic of this dietary regimen. Records of subjective impressions report "an easy, satisfying movement."

accompanied by a sense that emptying is complete and is followed by a feeling of well being. Likewise, a large bulky "formless" stool, such as is obtained when wheat bran or milled bran products are ingested in appropriate amounts, gives no difficulty whatever during the act of defecation. Figures 2 and 3 show such stools observed in the course of our study.

Occasionally the stool showed both a fecal-unit part and a sausage-shaped portion. Figure 4 is an example of this. The records of subjective impressions made



Fig. 3.—Specimen passed by F. B. W. while subsisting on the basal diet plus about an ounce daily of wheat bran, which had been treated with weak acid in order to remove phytin. This is an example of what might be called the semiformed or a formless stool, which was characteristic of this dietary regimen. The record of subjective impressions describes it as "a most satisfactory movement."

at the time these stools were passed contain such remarks as "a large stool, satisfying but hard to start," "a fairly easy movement, first part tending to be scybulous," and others similar in nature. This type of stool is very likely to appear when the individual

6. Cowgill and Anderson.⁴ Cowgill and Sullivan.⁵

changes from a low-roughage diet to a high-roughage regimen; presumably, the increased intake of roughage stimulates intestinal motility, and the food residues from the new meal reach the rectum in time to be passed along with the scybalous masses formed by the residues from the low-roughage regimen. In all probability, the presence of the extra roughage serves to increase the stimulus for defecation. A similar phenomenon is that observed when a patient whose bowels are constipated has been given a barium meal as part of a roentgenologic examination. The scybalous masses characteristic of the constipation are eliminated just ahead of the roughage of the barium meal.

The feeling that emptying is complete may be related to the size of the stool, the easy passage of a large amount of material nearly always being interpreted subjectively as a "satisfying movement." There seems little doubt that the pain accompanying the elimination of fecal-unit stools is due to the hardness of the fecal masses and their size. It seems obvious that the passage of any hard object approximating at all the diameter of a moderately distended anal ring should be more painful than the passage of an object of the



Fig. 4.—Specimen passed by P. S. while receiving the basal diet plus a processed bran product. This stool represents a combination of the fecal-unit type and the sausage type. The record of subjective impressions made at the time this specimen was passed describes it as a "satisfactory movement except for the first part, which is scybalous."

same size but of softer and therefore more pliable consistency.

In view of these observations, we suggest that clinicians who are treating cases of constipation give due attention to the matter of securing an easy passage of dejecta together with a satisfying sense that all fecal material has been eliminated. We have not seen this point emphasized in the literature but are convinced from our observations, made under carefully controlled dietary conditions, that it is important.

In stating his belief that defecation at least once a day is not necessary for every so-called normal individual, Alvarez⁷ writes that he has seen many persons who defecate not more than once every three or more days, and this without definite deleterious effects. We are naturally led to inquire as to how painful each defecation may be in such an individual when it does finally occur. One of the patients in the group reported in our second paper⁵ was in the habit of defecating about once every three days, but the difficulty with which each elimination took place was sufficient to

cause him to inquire as to how he might be treated for what he regarded as definite constipation.

What may appear to the clinician as absence of stasis may still be regarded as definite "constipation" by the patient. For example, the clinician may look on movements occurring once a day as evidence that material can pass through the alimentary tract without obstruction and does pass through in what appears to be a reasonable time. The patient, on the other hand, may consider that his bowels are constipated because the dejecta are of very solid consistency and difficult to pass; such a patient will not be satisfied that his constipation has been "cured" until he can accomplish the act of defecation comfortably and completely.

We suggest that, so far as the form of the stool is to be taken as a criterion of the state of laxation prevailing in the individual, the fecal-unit type described by Burnett be regarded as one extreme indicative of constipation—or, rather, indicative of lack of sufficient indigestible material to allow formation of a stool suitable for a completely satisfactory defecation—with a formless watery stool as the opposite extreme; and that for an appropriate objective of his therapy the clinician should aim at the production of a fairly large sausage-shaped stool having few or no markings indicative of haustral contractions.

333 Cedar Street.

Clinical Notes, Suggestions and New Instruments

VITAMIN D IN THE TREATMENT OF ACNE VULGARIS

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It is known that cases of acne vulgaris are improved temporarily by treatment with ultraviolet rays. The present work was based on the supposition that the activation of ergosterol in the skin by ultraviolet rays is the prime factor for this temporary relief in acne. We therefore attempted to alleviate acne by the direct ingestion of vitamin D in the form of viosterol.

We ourselves were our first patients, since both of us have this condition. We started with a dosage of 10 drops a day of Mead's viosterol in oil 250 D and increased this during a period of two weeks to 20 drops a day. After continuing for a period of one month we observed by actual count of pustules a decrease of about 75 or 80 per cent. We considered these results satisfactory enough to warrant experimentation on a larger number of subjects.

The subjects chosen for the experiment were thirty-five men and women from the University of Chicago, ranging in age from 17 to 30. All were started on the same dosage that we had taken; later it was increased to 20 drops a day. After a period of from four to five weeks we found a 70 to 80 per cent improvement in 90 per cent of the cases. In the remaining subjects, a 40 to 50 per cent improvement was observed. These results are based on actual counts of the pustules on the chest, face and back. In all the subjects the blood calcium remained normal. As a control we discontinued the treatment for two weeks with ten different subjects picked at random from this group and found a great increase in the number of pustules over that found during the period of treatment. On the other hand, those who continued the treatment showed a sustained improvement.

This preliminary communication is published with the hope that this form of treatment will be given further trial by the general practitioner and dermatologist. The work was done under the supervision of Dr. A. B. Luckhardt.

7. Alvarez, W. C.: Intestinal Auto-Intoxication, *Physiol. Rev.* 4: 352-393 (July) 1924.

HEMOSTATIC SCALP CLIP

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The time-consuming procedure of opening and closing in craniotomy has not been improved to the same degree as have diagnostic methods and surgical treatment of cerebral neoplasms. Many methods for the control of hemorrhage from the scalp have been employed, but still there remains ample opportunity for additional aids.

The scalp tourniquet was not practicable, for it was difficult to hold it in place during the operation, and it could not always be placed so as to control the hemorrhage. The running lock stitch served its place for hemostasis, but again it was unsatis-

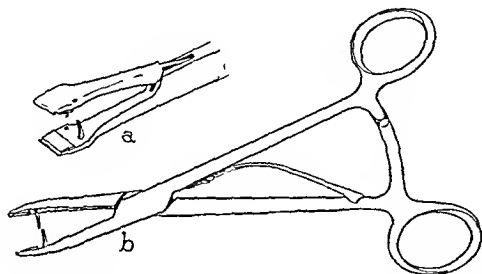


Fig. 1.—a, scalp clip holder; b, clip holder, illustrating jaws.

factory, for it required additional time to sew it in place; often it failed to control hemorrhage, and more often it devitalized the cut edge of the scalp.

The scalp clamps, if properly applied, controlled the bleeding from the cut edges of the scalp, but they frequently crushed the edges of the scalp, besides cluttering the wound with forceps. The pedicle clamp had a place in the hemostatic armamentarium, but it too is soon to be discarded, since it requires additional time to apply, and hemorrhage occasionally occurs from the internal surface of the bone flap following its removal.

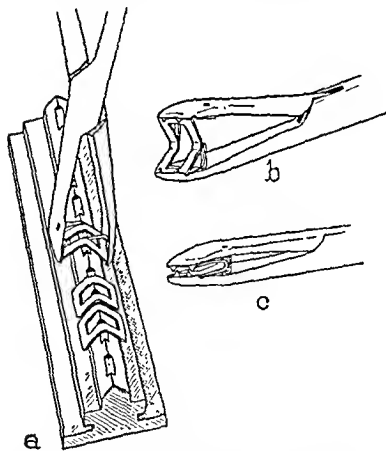


Fig. 2.—a, loading clips in holder from racks; b, position of clip held in holder, and c, position of clip when compressed.

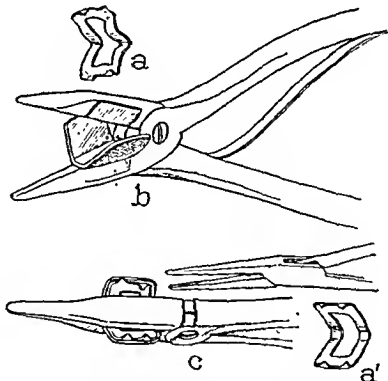


Fig. 3.—a and a', scalp clip before and after reshaping; b, reshaping forceps; and c, scalp clip reshaped and held in place while teeth are adjusted with pointed forceps.

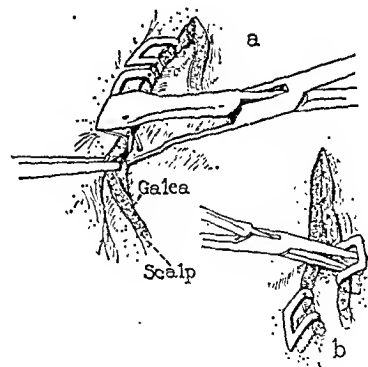


Fig. 4.—a, application of clips to scalp for hemostatic purposes; and b, removal of clip with pointed forceps preliminary to suture of galea with interrupted silk sutures.

The application of pointed forceps to the galea has been almost universally used, and would be the ideal method for hemostasis of the scalp were it not for the fact that the wound is filled with instruments which are constantly in the way. The end forceps of a group often pull loose from the galea, and occasionally the weight of the forceps pulls the scalp loose from the bone flap.

The perplexing problems of hemostasis and the loss of time in opening and closing wounds in the cranium stimulated one of us (Adson) to devise a hemostatic scalp clip. The technic of application and reshaping of the clip for future use was developed by both of us. The Mischel skin clip had been used, but we found it too narrow and not large enough to include

all the layers of scalp, especially if the scalp had been infiltrated with a local anesthetic. Swift called Adson's attention to the Willus Andrews clip, which was made from a flat, circular ring of german silver. The ring was bent at an angle to form a staple, with two sets of two teeth opposite each other for the purpose of fixing the position of the staple-like clip. These clips were used, but we soon learned that they were too large to be accurately placed in the corners of the wound. The application of the clip with Ochsner forceps was an awkward procedure, but no accompanying holder had been provided. The V shape, where the ring was bent at the diameter of the circle, had a tendency to compress the margin of the scalp too tightly if the clip was compressed sufficiently to remain in place. The clip could be used again many times, but there was no special arrangement for reshaping the clips to a standard opening.

We were convinced that a clip could be made that would control bleeding from the scalp without traumatizing the galea or skin, that could be applied more quickly than pointed forceps, that would remain in place until removed, and that would avoid the necessity of filling the wound with instruments. Following is the description of the scalp clip, the holder, the rack for clips and the reshapers:

The clip is stamped, from a copper alloy, in the shape of an open rectangle 22 by 12 mm., with the band measuring 3 mm. wide and 0.3 mm. thick. This is then shaped into an open U, with teeth at each corner opposing one another. The opening of the clip is standardized by the reshapers, in order that it may always be open enough to include the galea and the full thickness of the skin. The straight lines of the clips allow one to apply them side by side, avoiding hemorrhage between clips.

The clip holder (fig. 1) is equipped with jaws that hold the clip in readiness for use, with two posts situated behind the clip to permit the operator to apply force in adjusting the clip to the scalp. The metal plates in the jaws are of such thickness as to compress the edges of the clip evenly into a U shape without producing more pressure in one place than in another (fig. 2 c). The U shape prevents the injury to the edge of the scalp that commonly occurred when V-shaped clips were used. Removal of the clips from the rack, with relative positions of open and closed clips, held in the holder, may be noted in

figure 2. In loading the holder, the forceps portion is closed sufficiently to lock the ratchet, after which a nurse takes the instrument between her thumb and first finger, holds it just above the box joint, and slides the clip holder onto the clip, which is resting on the rack. The clips must be properly shaped (fig. 3 a and b) in order to facilitate the speed of application. Two or three holders are necessary to avoid delay. The method of applying the clips and their removal just preceding the suture of the galea may be noted in figure 4. The scalp is compressed laterally to the incision during the application of the clips just as it is when pointed forceps are used.

The hemostatic scalp clip has controlled bleeding, shortened the time of operation, reduced the number of instruments in the wound, and avoided trauma and sloughing of the edges of the scalp.

SUBMUCOUS LIPOMA OF THE CECUM

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This case is presented because of its infrequent occurrence. F. R., a white woman, aged 45, admitted to St. Vincent's Hospital, Bridgeport, Conn., April 10, 1932, complained of sharp pains in the epigastrium which were intermittent, belching of gas, nausea, and a sour taste in the mouth. She stated that she had never vomited.

She had been operated on fifteen years before for a ruptured ectopic pregnancy. Recovery was good. Eighteen years before, she had had malaria. Otherwise her past history was negative.

The present condition began about four months before admission with a dull ache in the epigastrium and a sour taste in the mouth. This ache gradually became worse and finally sharp pain was experienced which was intermittent in character. Although at first the pain was confined to the epigastrium, it later radiated to the lower right quadrant. The pain had no definite relation to food; however, she felt nauseated whenever the pain was present but never vomited. About two months before admission, she noticed a lump in the upper right quadrant just beneath the skin. About that time the pain seemed to subside for a few days but then returned with increased severity. The day before admission the pains became so severe that she was told that she had an acute appendicitis.

On admission, the patient looked very ill and complained of the severe pain in the epigastrium, which radiated to both sides of the lower part of the abdomen. She was nauseated and had a sour taste in her mouth. The temperature was 99.8 F. by rectum, the pulse was 88 and respirations were 22. On examination, the head and neck were essentially normal, as well as the chest, heart and lungs. The blood pressure was 156 systolic, 88 diastolic. The abdomen was round, obese and soft with no rigidity; there was tenderness in the lower part on both sides, but particularly in the lower right quadrant. The scar from the operation of fifteen years before was visible in the lower midabdomen. In the upper right quadrant of the abdomen was felt a mass about the size of a small orange, which was smooth and firm and moved with deep inspiration; it was not tender and appeared to be attached to the under surface of the liver. The extremities and the skin were normal.

Laboratory examinations showed: hemoglobin, 35 per cent; red blood cells, 1,850,000; white blood cells, 7,200; polymorphonuclears, 82 per cent; small mononuclears, 12 per cent; large mononuclears, 6 per cent. Analysis of the urine was negative; of the feces, negative for blood.

Because of the results of clinical and laboratory examination, operation was postponed for further study of the case. Cystoscopy and pyelograms showed normal kidneys, ureters and bladder. A cholecystogram showed a normal gallbladder. Roentgen examination of the colon by a barium enema revealed no obstruction to the passage of the barium until it reached the first portion of the transverse colon, where it stopped at a dilatation of the bowel. After one hour a small amount entered the hepatic flexure, where there appeared to be marked infiltration of the wall and canalization with dilatation of the transverse colon. The opinion of the roentgenologist was that there existed a malignant growth causing an obstruction.

Although up to admission the patient had never vomited and had been having good bowel movements with the aid of laxatives, she had no bowel movements in the hospital and began to vomit small amounts of green fluid three days after admission. Colonic irrigations were given with poor results. Her breath took on a foul odor. She began to complain of severe pains all over the abdomen and in the upper part of the back. The temperature, pulse and respirations rose slightly. She received daily subcutaneous infusions of saline solution and dextrose until the operation. The preoperative diagnosis was carcinoma of the ascending and transverse colon.

Operation was performed nine days after admission by Drs. William Verdi and Daniel Banks. The incision was made on the right side of the abdomen. The cecum was found high up on the right, and a large mass was palpated in the wall near the ileocecal valve. The appendix was normal. No metastases were found. The cecum, the ascending colon and a part of the transverse colon were resected in one piece and then the ileum was anastomosed to the transverse colon. Postoperative diagnosis was carcinoma of the cecum and the ascending colon.

Pathologic examination revealed a large mass 2 inches (5 cm.) in diameter in the cecum arising in the wall just above the ileocecal valve and occluding the lumen. The mass was composed of fatty tissue and was covered by mucosa. No enlarged lymph glands were found. Microscopic examination of the tissue from this mass showed a loosely combined connective tissue interspersed with lipid tissue, and necrosis was present. The mucosa covering showed signs of pressure atrophy. No malignant growth was found. The pathologic diagnosis was submucous lipoma of the cecum.

The patient made an uneventful recovery and was discharged, May 8, twenty-eight days after admission, fully recovered. The blood count, on discharge, showed hemoglobin 65 per cent and red blood cells 2,000,000.

COMMENT

Of the 181 cases of lipoma of the gastro-intestinal tract reported by Comfort¹ in 1931, only 16 were in the cecum alone; of these 16, 12 were with symptoms and 4 without symptoms. The symptoms present usually consisted of appendicitis or even obstruction. Consequently, the two conditions most usually confused with cecal lipoma are appendicitis and carcinoma. The case presented gave features simulating both conditions, and at times both conditions were suspected. However, the true nature of the lesion was not established until the specimen was seen by the pathologist; but rarely, if ever, is a correct diagnosis made before operation. To confuse submucous lipoma of the cecum with appendicitis is not a very serious mistake, but the confusion arising out of the fact that a malignant growth is suspected often leads to a large amount of unnecessary surgery and the subjection of the patient to an unwarranted risk.

The case presented illustrates all the characteristic features of a lipoma of the cecum. With an understanding of the physiology of this region, it is no wonder that the early symptoms of which the patient complained were those simulating appendicitis. The epigastric pain with later radiation to the lower right quadrant led to the diagnosis of appendicitis, with admission to the hospital for this complaint. The presence of a mass in the upper right quadrant of the abdomen with the negative laboratory data soon pointed away from this diagnosis. A barium enema was then given because malignancy was suspected on the basis of the mass. Conditions found on roentgen examination as a result of the enema were characteristic of intestinal obstruction due to a tumor in this region. The picture, however, was still further confused by the abnormally high cecum, which was up under the liver. Soon after the enema was given, symptoms of intestinal obstruction, with vomiting, increase in the vital signs and the aggravation of the pain in the abdomen developed. However, the signs of obstruction were by no means of a severe grade. The combination of a history of appendicitis with the subsequent development of the signs of intestinal obstruction might be taken as the clinical picture of an obstructive lesion of the cecum. It is to be differentiated from appendicitis by the negative examinations other than the abdominal pain and the appearance of intestinal obstruction. It is to be differentiated from a malignant growth of the cecum by the fact that malignancy does not yield a history of epigastric pain radiating to the lower right quadrant. By this complex of symptoms the clinical picture of benign lesions of the cecum, even though rare, may be perhaps split off from the large group of conditions that yield symptoms referable to this region and be diagnosed more frequently.

Another interesting feature of this case was the relatively severe grade of secondary anemia that was present. The hemoglobin on admission was 35 per cent and the red blood count 1,850,000. It is well recognized among clinicians that lesions involving the ileocecal region have a marked tendency to the production of severe secondary anemia. The explanation of this fact, however, has not received the attention it deserves. Coon of the Mayo Clinic, in a study of malignant growths in this region, came to the conclusion that the degree of anemia present correlated with the degree of intestinal obstruction. This is evidently not so, as in the case presented there was no obstruction of any great importance either in the history or during the course of the patient's illness in the hospital. The

1. Comfort, M. W.: *Submucous Lipomata of the Gastro-Intestinal Tract, Surg., Gynec. & Obst.* 52: 101-118 (Jan.) 1931.

cause of this type of anemia must lie in a functional disturbance in this region; but the physiology of the region is as much a mystery as the fact that these patients should develop a severe secondary anemia at all.

47 Kensington Street.

ARTERIOVENOUS FISTULA OF THE LEFT INTERNAL CAROTID ARTERY AND JUGULAR VEIN

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R. H., a white man, aged 54, an American lawyer, consulted me, March 6, 1933, complaining of a blowing, pumping, steam-like noise in the left ear, together with extreme nervousness, anxiety, headache and easy fatigue.

The noise in his left ear began in February, 1928, with a sudden onset while he was at ease reading in his library. Having just recovered from otitis media in the right ear, he first thought that possibly a like condition was making its appearance in the left ear. He consulted an ear specialist but a pathologic condition was not found. There had been no noticeable change in the noise heard, but he had progressively become more uneasy about his condition until he had reached the stage bordering on a nervous breakdown.

The patient was well developed and fairly well nourished. On examination there was some swelling on the left side, and the external veins of the face on that side appeared congested; palpation revealed nothing. There was no abnormal pulsation but on auscultation a blowing, pumping, hissing-like noise, very similar to that heard over an aneurysm, could be heard extending upward from below the tip of the mastoid process to the top and right side of his head. The blood pressure at the first examination was 180 systolic, 90 diastolic; the heart appeared normal. There was no history of syphilis; the blood and urine were normal. The patient was instructed how to promote collateral circulation through the circle of Willis and also advised concerning rest and diet so as to lower his blood pressure. In March, at the first examination, he could stand for the circulation to cease by pressure over the left internal carotid less than ten second. By repeated and frequent efforts, after three months, he is now able to withhold the circulation by pressure more than three minutes, and he appears to be much improved physically as well as mentally. The blood pressure is now 135 systolic, 85 diastolic.

This case is reported because of the extreme rarity of an arteriovenous fistula, especially in this region; also, because there is no history to account for its occurrence. If the collateral circulation continues to improve, ligation of the carotid artery will be done.

528 Ricou-Brewster Building.

CONGENITAL STENOSIS OF THE PYLORUS: TWO CASES

CHARLES E. TRIBBLE, M.D., NEW HAVEN, CONN.

I am placing on record a report of multiple cases of pyloric stenosis occurring in the same family. Other instances of this occurrence have been reported by Freund,¹ Grissen,² Heubner,³ Rosenhaupt,⁴ Ibrahim,⁵ Still,⁶ Finkelstein,⁷ Richter,⁸ Sauer,⁹ Davis,¹⁰ Moore¹¹ and Caulfield.¹²

There are three children in the family which came under my observation. The patients were the first and last born; the second child passed through infancy without any gastro-

intestinal trouble. The first child came under observation in the New Haven Hospital at the age of 8 weeks. He had been vomiting for five weeks. In the hospital, projectile vomiting occurred after all feedings, peristaltic waves were visible over the stomach, and a hard rounded mass was palpable just to the right of the epigastrium. A Fredet-Rammstedt operation was performed at the end of the third hospital week; recovery was satisfactory. Now, at the age of 5 years, the boy is in excellent health.

The third child vomited frequently during the first five weeks of life; at first, the vomiting was not projectile but later it became so and the patient was admitted to the New Haven Hospital at the age of 5 weeks. On examination, large, slow peristaltic waves were seen over the stomach, and there was a rounded tumor at the location of the pylorus. At the end of ten days a pyloroplasty was performed. The child did well and at the age of 6 months is a fat active baby, free of any gastro-intestinal symptoms.

330 Cedar Street.

Special Articles

REPORT OF THE AMERICAN COMMITTEE ON OPTICS AND VISUAL PHYSIOLOGY

The work of this committee is seriously hindered by the difficulty of getting its members together for adequate discussion of the subjects brought to its attention. A meeting has been held in connection with the annual meeting of each of the national organizations that have joined in forming the committee. But these meetings, held in different parts of the country, cannot be attended by all the members and can secure only inadequate time for their discussions.

At the meeting held in connection with the meeting of the American Ophthalmological Society in Washington, May 9, 1933, certain suggestions with reference to lenses were discussed and were placed before the American Ophthalmological Society in the following report:

1. A great number of claims made by the manufacturers advertising various patented and copyrighted lenses, accepted by reputable lay and scientific journals, are absurd.

For the protection of the patient, therefore, it is the duty of the ophthalmologist to be well enough acquainted with the fundamental facts specifically to state in each prescription the exact coflexure of the lenses; in the case of the presbyope, whether two pairs of glasses, or bifocals, are desired, and the particular style or type of bifocals, and the shade and color of tinted glasses, so that the designation can be made in a scientific manner and not by trade names.

When tinted glasses are necessary for certain purposes, London Smoke Nos. 1, 2 and 3 are better than many that are said by their makers to perform miracles. Too much ado has been made about "glare." The "soft light" of a cathedral is a poor light for ordinary purposes.

2. The committee recommends that the scope of the Council on Pharmacy and Chemistry of the American Medical Association be extended to include spectacle lenses, instruments, appliances or drugs pertaining to ophthalmology; if it cannot be otherwise arranged, that this council be given authority to designate the person or persons to pass on the merits of such articles.

The cooperation promised last year, on behalf of the Council on Physical Therapy of the American Medical Association, does not seem adequate to meet the situation with regard to the prescription and advertising of lenses. Lenses, like medicines, may be of secret composition and be sold and advertised under copyrighted names, conditions that favor deceit and fraud that essentially constitute quackery. An appeal from this section should have weight with the Council on Pharmacy and Chemistry.

From the Department of Psychology of the University of Michigan, those who have undertaken the study of visual acuity have been able only in the last year to perfect their apparatus

From the Department of Pediatrics, Yale University School of Medicine, and the Pediatric Service of the New Haven Hospital and Dispensary.

1. Freund, W.: Mitt. a. d. Grenzgeb. d. Med. u. Chir. 11: 309, 1903.
2. Grissen, H.: Deutsche Ztschr. f. Chir. 75: 107, 1904.
3. Heubner, O.: Therap. d. Gegenw. 8: 433, 1906.
4. Rosenhaupt, H.: Wien. ... 160, 1907.
5. Ibrahim, J.: Ergebn. d. ... 1: 208, 1908.
6. Still, G. F.: Common ... of Childhood, London, Oxford University Press, 1920.
7. Finkelstein, H.: Lehrbuch der Säuglingskrankheiten, Berlin, Julius Springer, 1921.
8. Richter, H. M., in Abt. I. A.: Pediatrics, Philadelphia, W. B. Saunders Company 3: 453, 1924.
9. Sauer, L. W.: Arch. Pediat. 41: 145 (March) 1924.
10. Davis, H. H.: Congenital Hypertrophic Pyloric Stenosis in Twins, J. A. M. A. 83: 686 (Aug. 30) 1924.
11. Moore, H. L.: South. M. J. 17: 187 (March) 1924.
12. Caulfield, E. J.: Familial Incidence of Pyloric Stenosis, Am. J. Dis. Child. 32: 706 (Nov.) 1926.

and work out methods of study. With this progress they hope at an early date to report important scientific results.

The National Society for the Prevention of Blindness calls attention to the effort of the Committee on Central Statistics of the Blind to prepare a Table for the Uniform Grouping of the Blind by Amount of Visual Perception. They have proposed four groups for the blind:

1. "Totally blind," including from no light perception to 2/200.
2. "Motion and form perception," from 2/200 to 5/200.
3. "Traveling sight," from 5/200 to 10/200.
4. "Ability to read large letters," from 10/200 to 20/200.

And "borderline cases," vision of 20/200 or better.

Your committee feels that such grouping could not help the understanding of the disability of blindness and that the matter should receive careful consideration from ophthalmologists in general, before any such plan of grouping is promulgated.

For the Committee,

EDWARD JACKSON, Chairman.

REPORT OF COMMITTEE ON COMPENSATION TABLES FOR EYE INJURIES

Your committee has continued its activities during the last year and is pleased to report increasing use of the method advocated by it for determining the visual efficiency of an individual following industrial injury or occupational disease of the eyes.

In reply to a letter of inquiry directed to the International Association of Industrial Accident Boards and Commissions of the U. S. A., as to the uniformity of methods for evaluating visual efficiency following ocular injuries or occupational diseases, and as to how many boards and commissions utilized the American Medical Association committee's methods, the secretary replied (in part):

"Except in states where compensation for specific injuries is written into the statutes, I think all the states compute partial permanent (disability) on a percentage of total permanent (disability), and this would apply to eye injuries as far as I know.

"Economic blindness is construed as total permanent disability by a majority of the industrial commissions; in fact, by all of them, so far as I know, unless specific weighting is written into their statute.

"There has not only been a tendency to adopt the recommendation made by the Section on Ophthalmology of the American Medical Association in determining visual efficiency, but, so far as I know, it has in practice been adopted by every state where a specific weighting is not written into the statute."

CORRESPONDENCE WITH WORKMEN'S COMPENSATION BOARDS

On March 28 and 29, 1932, the Bureau of Legal Medicine and Legislation, American Medical Association, sent fifty-three letters to the several workmen's compensation boards in the United States. Each board was asked to state whether the method approved by the American Medical Association for the appraisal of visual efficiency had been adopted by it, and, if so, the date of adoption. Each board was asked for criticisms and suggestions with respect to the method, based on the board's experience with it. Twenty-six replies were received. The following is an analysis of these replies:

Officially Adopted

| | |
|---------------------|----------------|
| Arizona..... | Nov. 3, 1925 |
| North Carolina..... | Jan. 1, 1931 |
| Tennessee..... | June 1, 1928 |
| Washington..... | March 17, 1931 |

From the state of Kansas a rating sheet was received that indicated that that state used the standards set forth on page 3 of the American Medical Association's pamphlet "Appraisal of Loss of Visual Efficiency," but correspondence indicates that Dr. Gradle found variations between the Kansas method and the American Medical Association's method.

Use but Have Not Officially Adopted

Maine, Texas and Vermont. Hawaii uses a part of the American Medical Association's method, but the laws of the

territory make the adoption of the method in its entirety impracticable.

Use Similar Methods

Colorado, Ohio and West Virginia

Approve

Wyoming. There is no statement, however, whether the workmen's compensation board does or does not use the method.

Disapprove

Do Not Use

California

Alabama
Connecticut
Idaho
Indiana
Iowa
Michigan

Minnesota
New Hampshire
New Jersey
New York
North Dakota
Utah

COMMENTS

The following comments received from the several states may help throw light on the extent to which the American Medical Association's method is in use and some of the reasons why it is not more extensively used:

Alabama and New Hampshire have no industrial commissions. In Michigan the laws make the adoption of the American Medical Association's method impracticable.

New York uses a radically different method, and correspondence suggests that the American Medical Association's method is not approved.

New Jersey reported that it was unfamiliar with the American Medical Association's method, and it requested information concerning the method.

Idaho and Minnesota stated that they did not use the American Medical Association's method, but did not state what method they did use.

Connecticut and North Dakota rely on the Snellen tests.

Indiana and Iowa have no particular method but go on the testimony of physicians.

Utah uses the Chapman table.

On April 26 and 27, 1932, the Bureau of Legal Medicine and Legislation sent to thirty-seven insurance companies likely to be interested in the appraisal of the loss of visual efficiency letters inquiring whether these companies had adopted the American Medical Association's method and asking for criticisms and suggestions of that method, if it had been adopted. Replies were received from eleven companies. Of these eleven companies, the following favored the American Medical Association's method:

Aetna Casualty and Surety Company.
General Accident and Assurance Corporation, Ltd.
London Guarantee and Accident Company.
Lumbermen's Mutual Casualty Company.
Maryland Casualty Company.
Metropolitan Casualty Insurance Company.
National Life and Accident Insurance Company.
Union Indemnity Company.

The Travelers Insurance Company reported that it found the Snellen test more widely adopted.

The American Mutual Liability Insurance Company adopts the methods of the various state industrial commissions.

The Lloyd Casualty Company was unwilling to express an opinion.

Through the untiring efforts of one of the members of the committee, Dr. H. S. Gradle, the committee has succeeded in having the American Medical Association produce the Industrial Visual Acuity test charts for distance and near. The distance charts conform to the Snellen formula, i. e., characters subtending a 5 degree angle, and the component parts subtending a 1 degree angle at the distance from 200 feet to 20 feet to determine a visual efficiency for distance, and the near charts for 14 inches. These, with a pad of the Industrial Visual Field Charts and the Industrial Motor Field Charts recommended by the committee, may be obtained from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The committee asks for its continuance as an active working body of the Section on Ophthalmology.

Respectfully submitted.

HARRY S. GRADLE.
ALBERT C. SNELL.
NELSON M. BLACK, C. ; ..

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

HOSAL AND BROMHOSAL NOT ACCEPTABLE FOR N. N. R.

Hosal and Bromhosal are products marketed by the Abbott Laboratories as "Two Substitutes for Table Salt where Sodium Chloride is contra-indicated." No adequate statement of composition is given in the advertising or on the package. The only analysis available appears to be that given for Hosal by von den Velden (The Low Salt Diet, *Clin. Med. & Surg.* 39:257 [April] 1932) as follows:

| | Per Cent |
|--|----------|
| Calcium | 11.7 |
| Sodium | 15.3 |
| Magnesium | traces |
| PO ₄ | |
| Poly-amino-acids | |
| Low fatty acids, amounts not specified | |

Concerning the composition of Bromhosal, von den Velden states: "Bromhosal is a 60 per cent bromine preparation on the basis of Hosal, composed of calcium-sodium double salts of poly-amino-acids on the one side and low fatty acids on the other." Thus, as far as the advertising and labels of the product marketed by the Abbott Laboratories are concerned, the preparations are at best semisecret.

HOSAL

The advertising emphasizes the idea that "It [Hosal] contains only a minute quantity of sodium, and is free from sodium-chloride." Ordinary table salt contains 39.6 per cent of sodium, and according to the von den Velden analysis, Hosal contains 15.3 per cent of sodium. The latter, therefore contains 39.2 per cent of the sodium contained in table salt; hardly to be spoken of as "a minute quantity." The misleading statement must be regarded as harmful in view of the well established fact that sodium, rather than chlorine, is important for the production of edema.

An associate of the Council's referee and two assistants performed some organoleptic tests to determine the flavor imparted to food by Hosal and the amount necessary to produce the desired degree of salinity in comparison with table salt. There was agreement that the flavor imparted to foods by Hosal was distinctly different from that of table salt and that the flavor was unpleasant, resembling somewhat the flavor of meat extracts. All of them found that the flavor was too unpleasant to push it to the degree of salinity to which they were individually accustomed. It was found that approximately 50 per cent more of Hosal than of table salt had to be used to produce any definite salinity. The referee's associate reported: "It may be pointed out that indiscriminate regulation of the salt intake loses sight of the fact that the electrolyte pattern constantly shifts in nephritis and that very frequently actual deficiencies of base make such restrictions inadvisable and even dangerous." The referee's associate added that a colleague has used potassium chloride in long standing cases of nephrotic edema and finds it extremely satisfactory, cheap, and without harmful effects over long periods. He quoted Peters' statement (Salt and Water Metabolism in Nephritis, *Medicine* 11:435 [Dec.] 1932): "... the regulation of the sodium chloride intake is not a matter for routine prescription but one that requires the most critical consideration in each individual case."

BROMHOSAL

The advertising circular states that "Bromhosal consists of 60 per cent bromine chemically combined with Hosal . . ." The misleading statements with regard to the absence of sodium chloride apply, therefore, to both products. The associate of the Council's referee reported that Bromhosal is definitely more palatable and saltier than Hosal. But he pointed out that the product is proposed not as a salt substitute, but as a medication. The advertising circular states: "Bromhosal is of value in all cases in which specific bromide therapy is indicated, particularly in epilepsy and epileptoid states, and in the

numerous diseases in which a depression of psychic excitation is desired. In certain vasomotor disturbances, and in insomnia and the psychic irritations during the menopause and menstrual periods, Bromhosal has proved of value." The product is therefore offered as a substitute for the official bromide preparations such as sodium or potassium bromide, which cost far less, without any evidence of advantage over these salts. It is the opinion of a neurologist who is an associate of the Council's referee that but little if any evidence of therapeutic superiority exists. It is pointed out that if sodium is not desired in bromide therapy, as in nephritics with edema, the official potassium bromide can be used. The referee's associate further pointed out that Bromhosal represents a mixed, and probably undesirable, type of therapy, since it combines the question of bromide therapy with that of the salting of food. It puts on the tables of patients a drug which is likely to escape the attention of the physician for long periods of time, whereas he is much more likely to check up on the medication if he has had to make out a prescription for the official preparation, which is entirely adequate for bromide therapy.

After careful consideration of the referee's and associate's comments, the Council declared Hosal unacceptable for New and Nonofficial Remedies because it is a preparation of semisecret composition marketed with misleading and unwarranted claims; it declared Bromhosal unacceptable because it is a preparation of semisecret composition marketed with misleading and unwarranted claims as a potentially dangerous substitute for bromide therapy with the entirely adequate official preparations.

LA MERCY MINERAL WATER NOT ACCEPTABLE FOR N. N. R.

La Mercy Mineral Water was presented by McKesson & Robbins, Inc., for consideration by the Council as a natural product from thermal springs at Los Banos, Calif., proposed for therapeutic use in the treatment of dysmenorrhea. The firm submitted a detailed analysis on the basis of which the following "Hypothetical Form of Combination" was declared:

| | Grains Per U. S. Gallon |
|--|----------------------------|
| Ammonium Chlorid (NH ₄ Cl) | 0.79 |
| Lithium Chlorid (LiCl) | Trace |
| Potassium Chlorid (KCl) | 0.50 |
| Potassium Bromide (KBr) | 0.09 |
| Potassium Iodine (KI) | 0.16 |
| Sodium Chlorid (NaCl) | 121.63 |
| Sodium Tetraborate (Na ₂ B ₄ O ₇) | 4.08 |
| Disodium Arsenate (Na ₂ HAsO ₄) | 0.04 |
| Calcium Phosphate (Ca ₃ (PO ₄) ₂) | 0.29 |
| Magnesium Carbonate (MgCO ₃) | 0.27 |
| Calcium Carbonate (CaCO ₃) | 0.41 |
| Calcium Sulphate (CaSO ₄) | 3.58 |
| Calcium Silicate (CaSiO ₃) | 2.60 |
| Silica (SiO ₂) | 0.01 |
| Iron Oxide (Fe ₂ O ₃) | 0.10 |
| Alumina (Al ₂ O ₃) | 136.75 |

Anticipating an objection to the name, the firm offered to market the product under any name that would meet the Council's requirement. The firm was informed that the name "La Mercy Mineral Water" is objectionable and that the Council would recognize either "Banos Mineral Water" or "McKesson Saline Mineral Water" as a suitable name.

In its presentation of the product, the firm admitted that scrutiny of the analysis would furnish no reason to believe that the product should have any specific influence on the pain or associated pains of dysmenorrhea, amenorrhea or the menopause, but it submitted 430 case reports as clinical evidence for the therapeutic value of the product in "Primary Dysmenorrhea, Complete Retroversion Infantile Uterus, Amenorrhea, Menorrhagia, Metrorrhagia, Endometritis, Neurasthenia, Fibroid Tumor, Cervical Erosion, Ovaritis, Salpingitis and Menopause."

The Council's referee examined the case reports and also submitted the material to a colleague who is an experienced gynecologist. Among the cases reported are forty-five cases treated by Dr. A. V. Pettit of San Francisco, the list of diagnoses of which includes, according to Dr. Pettit's statement, patients "who have many of the recognized causes of dysmenorrhea such as acute flexions of the uterus, the infantile or under-developed uterus, patients having small intramural benign tumors of the uterus and those having marked disturbances of the blood supply, mainly varicosities of the broad ligaments."

Dr. Pettit further states: "This about covers the field of dysmenorrhoea due to mechanical or physiological pathology." "Of these forty-five patients only two have reported no benefit." "This report must be considered simply a report of what patients say concerning the efficacy of the water." "From a purely scientific standpoint, the number of cases is far too few for the complete working out of the value of this water in the treatment of the various types of dysmenorrhoea. To do this thing properly it would require at least a year or more."

Records of smaller groups of cases by other physicians include cases of fibroids, menopausal symptoms and stenosis of the cervix. A consultant, among other observations, points out that postoperative stenosis of the cervix often is relieved spontaneously; that the complete and permanent relief of dysmenorrheic symptoms arising from infantile uterus is unusual, and that the statement that in one series relief followed in forty-three of forty-five cases, from whatever their cause, raises questions as to the accuracy of the observations attributed to the patients. The statement of the distributors that of 385 cases plus 45 control cases—making 430 cases in all that have been treated—only one has reported no benefit, seems to be a claim that more careful observations are unlikely to confirm. It is likely that moderate water drinking may benefit some patients with dysmenorrhea.

In the discussion of the referee's report, a member of the Council pointed out that there would seem to be no question that the therapeutic claims are unfounded, including as they do recommendations for use in developmental abnormalities, nutritional disturbances and inflammatory conditions of the uterus; it would seem that the La Mercy water would have the effect of a saline mineral water.

The Council declared the product submitted as La Mercy Mineral Water unacceptable for New and Nonofficial Remedies for lack of acceptable convincing evidence for its therapeutic value in the conditions for which its use is proposed.

REX-ORCIN NOT ACCEPTABLE FOR N. N. R.

Rex-Orcin is the proprietary name under which the Amp Research Laboratories, Corona, Long Island, N. Y., market a preparation for treatment of the scalp, stated to have the following composition:

| | |
|---|-------|
| "Tannic acid U. S. P..... | 0.5% |
| "Salicylic acid U. S. P..... | 1.0% |
| "Castor Oil, U. S. P..... | 24.5% |
| "Euresol (Mono acetate resorcinol)..... | 5.0% |
| "Ethyl alcohol | 69.0% |
| "Perfumed to render suitable for use." | |

The product appears to be only another one of the many hundreds of proprietary preparations on the market for treatment of the scalp. There is nothing new about the formula. It might be a little more complex than even many of the ambitious formulas on the market, but it can hardly be said that this adds anything to its value, for the opposite is probably the case. Certainly there is no new discovery in this preparation that justifies the proprietary name Rex-Orcin.

Resorcin has been used for years in the treatment of diseases of the scalp. The same is also true of resorcinol monoacetate (introduced as curesol) and of salicylic acid. Tannic acid, on the other hand, is not a common ingredient in this sort of preparation. Just what can be expected from this adjuvant is difficult to state. Of course, the castor oil in the preparation is an old remedy, generally added to alcohol preparations to overcome dryness of the scalp. The directions given on the label are likely to encourage ill advised use of Rex-Orcin by the general public. If it is desired to use such a preparation, it would be far better that the physician write an individual prescription.

Rex-Orcin is offered as "a stimulating and effective antiseptic." If it is rubbed in hard enough, it might cause a rubefacient action on the scalp. No evidence is offered to show that it is an "effective antiseptic for the treatment of hair and scalp." Just what is meant by this last statement only the manufacturers can say.

The Council declared Rex-Orcin unacceptable for New and Nonofficial Remedies because it is an unnecessarily complex and unscientific mixture marketed under an unacceptable proprietary name, with unwarranted therapeutic claims, and in such a manner as to lead to its ill advised use by the public.

Committee on Foods

GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

THE CLAIM "DIGESTS STARCH" FOR FOODS CONTAINING DIASTATICALLY ACTIVE MALT OR MALT EXTRACT

Such claims as "digests starch," "aids digestion," "digests other foods," "digests the starch of other foods," "contains natural digestive elements," and equivalent claims frequently accompany foods containing diastatically active malt or malt extract.

The normal person unaided is able to care for the digestion of foods. Any digestion of starch in ingested foods due to diastatically active malt or malt extract products included with a meal is of no practical significance. Aids of this character for starch digestion are not necessary. Any child or adult can digest starch. Saliva swallowed in eating is many times more potent for digesting starch than is any quantity of food containing malt or malt extract likely to be consumed.

It is not true that foods containing diastase "digest other foods." The diastase is incapable of digesting proteins or fats, important components of most foods.

Diastatically active malt or malt extract products have starch digestive properties, but they are of no significance for digesting starch or for aiding the normal processes of starch digestion. Starch digestive claims in advertising for this type of foods usually have therapeutic or medicinal implications which lead to self-medication and are unwarranted; they promote misleading advertising.

VAGUE "CLINICAL EXPERIENCE" CLAIMS

Vague claims such as "clinical experience with XYZ" has demonstrated its efficiency" and equivalent claims for foods are not informative to the public or physicians and because of misleading therapeutic implications are objectionable. Such claims should state what clinical experience with the foods has demonstrated; they should be supported by actual experience of physicians. Claims regarding clinical experience are justified only if specific and supported by sufficient evidence. Vague claims in general are not instructive and lead to deceptive advertising.

Claims of clinical experience cannot be based on replies to general questionnaires promiscuously distributed to physicians. Information and data so obtained cannot be rated as the results of clinical experience. In this connection see the General Committee Decision "Questionnaire Advertising."

ADDITION OF PHENOLPHTHALEIN, ACETYL- SALICYLIC ACID (ASPIRIN) AND OTHER DRUGS TO CHEWING GUM, CANDY AND FOOD ARTICLES

Medicating common food articles with drugs—such as the addition of phenolphthalein to chewing gum, acetylsalicylic acid (aspirin) to candy, and senna to bread—is becoming a growing menace and must be viewed with apprehension and concern as a danger to public health. The general appearance of these drugged foods does not distinguish them from the respective nondrugged forms; label declaration of the added drugs cannot be expected to prevent their fortuitous misuse or their consumption by the uninformed, the unobservant or those unable to recognize the significance of label statements. There is, therefore, the ever present likelihood that children and even adults may unsuspectingly or ignorantly consume such drugged foods with results that may be disastrous.

The addition of drugs to common foods tends to promote indiscriminate self-medication and is to be unqualifiedly condemned as a menace to public health. The preparation of medicines with confections, such as sugar or chocolate, as a

device for making unpalatable drugs more acceptable to the patient is quite a different matter from the addition of drugs to articles of food that are bought by the public without restriction. This ruling, therefore, has no reference to so-called candy medications prescribed by a physician and taken under his directions.

"TRICK" CLAIMS IN FOOD ADVERTISING

Claims in food advertising implying for the food advertised the merits of something more valuable (such as milk) with which it may be admixed for use are of the nature of "trick" advertising. These claims are so constructed grammatically as to connect the stated values with the advertised food, whereas such values in large part are provided by the other products of the mixture. This "trick" grammatical structure is illustrated by the statement: "XYZ made with hot milk is not only delicious but nourishing. It is rich in the proteins, fats, carbohydrates and minerals children should have." The antecedent of "it" is XYZ; the grammatical structure incorrectly makes XYZ the source of the fats, carbohydrates, minerals and proteins children should have. Claims of this character to all appearances are planned to "trick" the reader. Such a statement as "the mixture of XYZ and milk is rich in proteins, fats, carbohydrates and minerals (calcium and phosphorus)" is correctly informative and satisfactory but should be used in such a manner as to be free from false connotations.

Food advertising should be truthful in statement and by implication. "Trick" advertising and all other misleading forms are harmful to food advertising and merchandising generally.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

CURTISS OSTRICH EGG CANDY

Manufacturer.—The Curtiss Candy Company, Chicago.

Description.—Sweet chocolate enrobed candy containing corn syrup, sucrose, gelatin, glycerin, tapioca starch, vanillin and coumarin.

Manufacture.—The ingredients in definite proportions are whipped to a viscous consistency and transferred by machine to "starch molds"; when firm, the molded pieces are mechanically removed, automatically enrobed with sweetened chocolate, cooled and wrapped.

| Analysis (submitted by manufacturer).— | | per cent |
|---|------|----------|
| Moisture | 7.0 | |
| Ash | 0.3 | |
| Fat (acid hydrolysis method) | 12.2 | |
| Protein (N × 6.25) | 2.1 | |
| Reducing sugars as dextrose | 15.3 | |
| Sucrose (copper reduction method) | 32.5 | |
| Crude fiber | 0.0 | |
| Carbohydrates (by difference) | 78.0 | |

Calories.—4.3 per gram; 122 per ounce.

TOPS-ALL FLOUR (BLEACHED)

Manufacturer.—Minneapolis Milling Co., Minneapolis, of the Commander Larabee Corporation.

Description.—A strong hard spring wheat "stuffed straight" flour; bleached.

Manufacture.—Selected hard spring wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are bleached and bleached with nitrogen trichloride (1.8 Gm. per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (½ ounce per 196 pounds).

Claims of Manufacturer.—For commercial bread bakeries.

LARSEN'S PRUNES (STRAINED-UNSEASONED) FLAVORED WITH LEMON JUICE

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved prunes flavored with lemon juice, prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of prunes. No added sugar or salt.

Manufacture.—Dried prunes are inspected for removal of any undesirable material, thoroughly washed and steamed until soft; the pits are removed; the prune pulp is sieved in steam atmosphere, is adjusted to a desired consistency with a small amount of water and lemon juice to produce a citric acid content of 0.5 per cent in the final product, is heated to 82 C. and automatically filled into washed cans, which are sealed and processed for thirty minutes at 100 C.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 77.0 |
| Total solids | 23.0 |
| Ash | 0.7 |
| Salt (NaCl) | 0.1 |
| Fat (ether extract) | 0.1 |
| Protein (N × 6.25) | 0.9 |
| Crude fiber | 0.6 |
| Carbohydrate other than crude fiber (by difference) | 20.2 |
| Titratable acidity as citric acid | 0.5 |

Calories.—0.9 per gram; 26 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

HIGHLAND WHEAT BREAD (BLEND OF WHITE AND WHOLE WHEAT FLOURS)

Manufacturer.—Langendorf United Bakeries, Inc., San Francisco and Seattle.

Description.—White flour and whole wheat flour bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from white flour, water, whole wheat flour, sucrose, shortening, salt, powdered skim milk, yeast, molasses, a yeast food containing buttermilk, calcium phosphate and ammonium tartrate, malt extract syrup and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture (entire loaf) | 37.0 |
| Ash | 1.9 |
| Fat | 4.0 |
| Protein (N × 5.7) | 11.2 |
| Reducing sugars as invert | 4.5 |
| Sucrose (copper reduction method) | 0.1 |
| Crude fiber | 0.8 |
| Carbohydrates other than crude fiber (by difference) | 45.1 |

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—Prepared from a mixture of white and whole wheat flours.

GERBER'S STRAINED VEGETABLE SOUP

Manufacturer.—Gerber Products Company, Fremont, Mich.

Description.—Strained cooked peas, carrots, spinach, rice and barley flours, beef, tomatoes, and celery retaining in high degree the natural vitamin and mineral values; the coarser fibrous material is removed. No added seasoning or sugar. The vegetables are canned in season without salt or sugar, and at intervals are combined with the other ingredients and strained.

Manufacture.—The vegetables are grown from selected seed under the supervision of trained field men, harvested at the proper state of maturity, and immediately washed, drained and inspected. They are not blanched, thus avoiding loss of nutrients. The ingredients are heated under steam pressure until sufficiently softened in an atmosphere of steam and handled thereafter in a closed system and are not exposed to the air. The material is forced through a strainer of perforated monel metal, pumped through enameled metal tubing to glass lined vacuum tanks where in the practical absence of oxygen and at a low temperature the water content is adjusted to produce a uniform consistency in the finished product. The special equipment and procedure have been developed to protect vita-

min values which otherwise may be destroyed or seriously reduced. The product is automatically filled into hot water and steam washed cans which are immediately sealed (the air exposure is for less than one-third second) and processed.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 89.9 |
| Total solids | 10.1 |
| Ash | 0.3 |
| Fat (ether extract) | 0.1 |
| Protein (N \times 6.25) | 1.9 |
| Reducing sugars before inversion (as invert) | 0.6 |
| Sucrose (copper reduction method) | 0.3 |
| Starch (acid hydrolysis method) | 4.7 |
| Crude fiber | 0.2 |
| Carbohydrates other than crude fiber (by difference) .. | 7.6 |

Calories.—0.4 per gram; 11 per ounce.

Vitamins.—The equipment is especially designed to exclude oxygen from the products during the cooking and straining operations, thereby efficiently protecting the vitamins.

Minerals.—All cooking water is retained, thus avoiding loss of minerals or water soluble nutrients.

Claims of Manufacturer.—Prepared for the diets of infants and invalids or for special smooth diets.

ROBIN'S BEST FLOUR (BLEACHED)

Manufacturer.—The Robinson Milling Company, Salina, Kan.
Description.—Hard winter wheat "patent" flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds).

Claims of Manufacturer.—For bread baking in the home and bakeshop.

NURMI'S EXTRA FINE BREAD

Manufacturer.—Nurmi's Bakery, Fresno, Calif.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, unsweetened skimmed condensed milk, sucrose, lard, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

WHITE HOUSE RICE

Manufacturer.—Standard Rice Company, Inc., Houston, Texas.

Description.—Scoured bran free rice.

Manufacture.—Brown rice as described under White House Natural Brown Rice (THE JOURNAL, May 27, 1933, p. 1689) is friction scoured to remove the bran coating, is passed between a rapidly revolving corrugated cylinder and a stationary corrugated case. The bran that is scoured off passes through the openings of the case and is removed by suction. The scoured rice is passed through a "brush" machine consisting of a revolving leather covered wooden drum enclosed in a vertical wire-covered case through which the polishings pass. The polished rice is passed through wire-covered reels to remove small rice and broken pieces. The prepared rice is heat or electrically treated to destroy insect life and is packed in wax paper cartons.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 11.3 |
| Ash | 0.4 |
| Fat (ether extraction method) | 0.6 |
| Protein (N \times 5.95) | 6.1 |
| Crude fiber | 0.3 |
| Carbohydrates other than crude fiber (by difference) .. | 81.3 |

Calories.—3.6 per gram; 101 per ounce.

Vitamins.—Practically devoid of vitamins.

Claims of Manufacturer.—Not coated with talcum, "glucose" or other coating material.

CLAPP'S ORIGINAL PUREE OF APRICOTS

(CONTAINS SULPHUR DIOXIDE)

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Strained, cooked "sulphured" dried apricots. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—California dried apricots are given three separate washings to reduce the sulphur dioxide. (Tests show that the washing reduces the sulphur dioxide from 2,500 parts per million to less than 100 parts.) The apricots are slightly cooked, strained, filled into glass jars and processed as described for Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------------------------------|
| Moisture | 84.7 |
| Total solids | 15.3 |
| Ash | 1.1 |
| Fat (ether extract) | 0.5 |
| Protein (N \times 6.25) | 0.7 |
| Crude fiber | 2.4 |
| Carbohydrates other than crude fiber (by difference) .. | 10.6 |
| Sulphur dioxide | less than 100 parts per million. |

Calories.—0.5 per gram; 14 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

LARSEN'S VEGETABLES WITH CEREAL AND BEEF BROTH. STRAINED-UNSEASONED

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved vegetables (carrots, potatoes, tomatoes, peas, beans, spinach) with pearl barley and beef extract; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw vegetables. Contains no added sugar or salt.

Manufacture.—With exception of the tomatoes, the vegetables are harvested, immediately delivered to the factory and processed as described for tomatoes (THE JOURNAL, July 1, 1933, p. 35); the tomatoes are regular canned products. The pearl barley is cooked for two hours to a gruel of desired consistency. The vegetables, barley and beef extract in formula proportions are thoroughly mixed, strained, canned and processed for sixty minutes at 116 C.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 89.1 |
| Total solids | 10.9 |
| Ash | 0.6 |
| Salt (NaCl) | 0.2 |
| Fat (ether extract) | 0.2 |
| Protein (N \times 6.25) | 1.7 |
| Crude fiber | 0.3 |
| Carbohydrates other than crude fiber (by difference) .. | 8.1 |

Calories.—0.4 per gram; 12 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

TOP-N-OCH BREAD

Manufacturer.—Maddox & Jennings Bakery, Inc., Roanoke, Va.

Description.—White bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from flour, water, condensed whole milk, lard, sucrose, salt, yeast, a mixture of gelatinized white corn flour and soya bean flour, malt syrup, and yeast foods containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, and calcium acid phosphate and calcium peroxide.

SWEET TOOTH SELF-RISING PANCAKE FLOUR

Manufacturer.—Black Brothers Flour Mills, Beatrice, Neb.

Description.—Self rising flour containing "first clear" wheat, white corn and rye flours, calcium acid phosphate, salt, sodium bicarbonate, corn sugar and dry skim milk.

Manufacture.—The ingredients in definite proportions are thoroughly mixed in a batch mixer and automatically packed in paper bags.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 22, 1933

PROBLEM OF MEDICAL PATENTS

Recently the question of the desirability of patents of products used in the field of medicine has been hotly debated. The Principles of Medical Ethics of the American Medical Association says specifically, "It is unprofessional to receive remuneration from patents for surgical instruments or medicines." It has been the pride of medicine down the centuries that it gave freely of its discoveries for the benefit of mankind. Jenner's contribution of vaccination against smallpox, Pasteur's method for the control of hydrophobia, Withering's contribution of digitalis, became the property of all who cared to use them for the prevention or treatment of disease.

As the science of medicine developed, however, new elements entered into its work and participated in its endeavors. Physicians began less and less to concoct their own remedies and to depend on the manufacturer of pharmaceuticals for the collection of materials and for their preparation and distribution. In an earlier day the physician who developed new devices or appliances manufactured a few with the aid of some neighboring blacksmith or carpenter. The modern physician is likely to delegate the manufacture to an industry capable of turning out thousands of units, in contrast to the ten or fifteen which might be used formerly. Greater dissemination of medical knowledge creates a greater demand for new drugs and new equipment. Moreover, the situation is complicated by the entrance into medical research of specialties associated with medicine yet not necessarily partaking of the ideals of the medical practitioner. Today the development of a new medicament may involve the participation of chemists, physicists, laboratory technicians, physiologists, biochemists and roentgenologic technicians who may not themselves be concerned at all with the traditions of medicine as a profession. Insulin, for example, was developed by biochemists, physiologists and a practicing physician. Whereas an ethical physician might not derive remuneration from a patent, biochemists or physiologists might do so. Certainly

the name of the physician Banting is as much associated with the discovery as those of his colleagues, Macleod, Collip and Best. Finally, if the discoverer fails to patent his discovery, any one else may do so and thus steal both the discovery and the profits. The tremendous advantages of being first in the field with a new medical preparation are well recognized in the pharmaceutical industry.

In a recent issue of *Science*, Dr. Allen Gregg¹ considered particularly the new questions raised by the patenting of products through universities. In order to avoid possible ignominy and recriminations against physicians who might patent medical discoveries, and especially when the work was done under the auspices of and with equipment provided by universities, it has become customary to have such patents taken out in the name of the university, college or research institution and to control and promote the preparations under boards appointed by these universities. Numerous universities now resort to such patenting to obtain money to support further research but also, possibly, with the idea of rewarding suitably the investigators of products used in medicine. Already medical patents are controlled by Harvard, Toronto, Columbia, Cincinnati, Wisconsin, Stanford, St. Louis, and Northwestern universities, by the Mayo Foundation, and by the Scarlet Fever Foundation of the McCormick Institute for Infectious Diseases.

As Dr. Gregg emphasizes, there may be excellent arguments in favor of such patents, yet their operation has already produced innumerable difficulties. Extraordinary jealousies develop between members of the same research staff because of special advantages accruing to those who derive income from patents. A tendency develops to promote new products rather than to examine them critically. The acquisitive desire, inherent in many persons, eventually leads to a psychology frame of mind described as "royalty crazy."

Vast sums must be accumulated for the protection of patents—to prosecute infringement. Extraordinary secrecy must be maintained, interfering with academic freedom in research. The existence of patents inhibits research on similar products or with the same materials by physicians in practice and by investigators in medical schools and universities. The university, once in the field of patents, as a routine attempts to protect every tiny innovation or result, eventually devoting more time and money to protect old discoveries than is spent on new research or on the studies necessary to determine the actual value of discoveries already made.

Sir Henry Dale,² director of the National Institute for Medical Research in London, accepts the medical tradition as embodying the true ideal, since the ultimate aim of medical research is to provide knowledge for the relief, cure or prevention of human suffering. In a

1. Gregg, Allen: *Science* 77:257 (March 10) 1933.
2. Dale, H. H.: Academic and Industrial Research in the Field of Therapeutics, address at the opening ceremony of the Research Laboratory of Merck & Company, Rahway, N. J., April 25, 1933.

recent address he contrasted the work done by physicians in practice and medical investigators in universities with the type of research carried on in the laboratories founded by industry. Sir Henry Dale expressed his conviction that a general use of patents in all parts of the field of therapeutic research would definitely hinder rather than promote progress. He felt that the greatest danger was in connection with a discovery of the biologic type. Particularly was he inclined to regard the medical patent as a peculiarly dangerous weapon when wielded by the good intentions of the academic amateur. The danger in patents in the chemical field did not seem to him so ominous, because only industrial research and vast organizations can make these preparations generally available at low prices. Nevertheless, only clinical trial in the hands of physicians under controlled conditions can ever determine with certainty the real value of any therapeutic product. Hence the development of such products must be a cooperative effort. This fact should not be forgotten by those who administer patents in the medical field.

Our new order of living in the machine age, the development of specialization in medical practice, the incorporation of great industries for the exploitation of laboratory discoveries, and similar factors seem to make necessary some change in the medical point of view concerning medical patents. The control of such patents by universities has to some extent assured standardization of products. Usually only reputable firms capable of developing and exploiting products honestly are granted licenses to participate in the manufacture and sale of products controlled by universities, although there are glaring exceptions. However, as has already been mentioned, there is extreme unevenness in the manner of administration of various patents by the groups involved. Conceivably the best interests would be served if some central body might be developed, wholly altruistic in character, capable of administering medical patents for the benefit of the public, and assuring a reasonable remuneration to the investigator, the devotion of much of the profit to research, and adequate returns to manufacturers willing to develop quantity production and distribution in an ethical manner. Such a central body might also set up requirements for adequate clinical research in connection with the development of new products, so that premature launching of unestablished products on the medical profession or on the public might be avoided.

In the opinion of the Council on Pharmacy and Chemistry of the American Medical Association, such premature exploitation is exactly what has occurred in relationship to the use of preparations of copper and iron. Leaving aside the question of priority in the discovery and the difficulties involved in preventing physicians from prescribing mixtures of copper and iron should they wish to do so; disregarding the fact that copper occurs as a natural contaminant in practically all

iron preparations, and that too in amounts apparently sufficient to bring about the desired therapeutic results, there still remains for debate the question as to whether or not the discovery is of practical value in the field of therapeutics.

The questions here raised must inevitably concern the scientific bodies of the American Medical Association as well as the Judicial Council, the House of Delegates and the Board of Trustees. Perhaps some suitable means will be evolved whereby the American Medical Association may lend its authority and influence to the establishment of a technic for the control of medical patents in the best interest of the public welfare and for the advancement of scientific medicine.

MANIFESTATIONS OF ANOXEMIA

The active cells of the body continually call for oxygen. This element is supplied by the arterial blood, which, in turn, depends on the respiratory processes to replenish its supply. The oxygen pressure in the blood must be sufficiently high to satisfy the bodily needs, if physiologic disaster is to be averted. The physician has long realized that anoxemia may attend hemorrhage and anemias of extreme type, because the oxygen carriers, the red blood cells, have become depleted in numbers or are deprived of their normal content of the respiratory pigment hemoglobin. Diseases of the circulation and of the lungs may bring about anoxemia in other ways. The severe symptoms and fatal effects of extreme deprivation of oxygen are quite familiar; the manifestations of mild oxygen hunger are not so well known, particularly because the body will often react so as to compensate for a diminution in the oxygen supply.

Life at high altitudes, unaided by special supplies of oxygen, involves the possibilities of malaise and disordered functions attributable to the lessened supply of oxygen incident to lowered barometric pressures. This has long been realized in mountain climbing and in balloon ascensions. The conquest of Mount Everest in the Himalayas, involving an ascent of less than 30,000 feet, has been prevented thus far not alone by the geographic and climatic difficulties but also by the problem of the oxygen supply. An altitude of 20,000 feet, without oxygen reinforcements is a possibility for only a few of the sturdiest acclimated persons. The advent of the airplane and the proposals to "fly high" above the clouds in every-day human transport brings the problem of the effects of even moderately lowered barometric pressure and oxygen tension of the air at such altitudes forcefully to the attention.

Several investigations¹ of moment in this connection have recently been conducted in the Department of

1. Van Liere, E. J., and Crisler, George: The Effect of Anoxemia on Hunger Contractions, *Am. J. Physiol.* 93: 267 (May) 1930. Crisler, George, and Van Liere, E. J.: The Effect of Anoxemia on the Digestive Movements of the Stomach, *ibid.* 102: 629 (Dec.) 1932. Van Lie e, E. J.; Crisler, George, and Robinson, Dennis: Effect of Anoxemia on the Emptying Time of the Stomach, *Arch. Int. Med.* 51: 796 (May) 1933.

Physiology at the West Virginia University in Morgantown. They extend the importance of studying anoxemia beyond the scope of the familiar diseases. First of all Crisler, Van Liere and their co-workers have demonstrated that even in moderate anoxemia the hunger contractions of the stomach are greatly decreased. The possible relation of this to the sensation of hunger is obvious. Furthermore, there is often a definite inhibition of gastric digestive motility as indicated by a decreased amplitude of stomach contractions and frequently by a fall in tone. Clinicians are, indeed, familiar with an apparent parallelism between gastrointestinal disturbances in the anoxemia of cardiac disease and the effects of anoxemia on gastric digestive motility. Finally, it has been found that, under carefully controlled observation, laboratory animals may show a prolongation of the emptying time of the stomach under anoxemic conditions. At a pressure of 560 mm. of mercury, which corresponds to an oxygen percentage of 15.35 and to an altitude of 8,000 feet, several animals showed a definite retention of food in the stomach. The higher the degree of anoxemia, the greater the prolongation of the emptying time of the stomach. At a barometric pressure which corresponds to an oxygen percentage of about 9.4 and to an altitude of 20,000 feet, food sometimes remained in the stomach as long as twenty-four hours. The altitudes represented by the figures quoted do not exceed the heights often reached in airplane travel. These modern studies of interrelations between mild anoxemia and gastrointestinal functions are therefore timely.

THE "TRACE" ELEMENTS IN NUTRITION

Fifteen years ago, Osborne and Mendel¹ called attention to the paucity of knowledge regarding the mineral nutrients. They asserted that there is no adequate experimental basis whatever to permit tenable statements regarding the indispensability or even the minimum requirement of any of the inorganic constituents of the dietary with the possible exception of calcium and phosphorus. A recent essay by Mary Swartz Rose² on the nutritional significance of some mineral elements occurring as traces in the animal body again points out that for many years interest in the study of the mineral elements in relation to nutrition was temporarily overshadowed by the evidence of organic factors potent in growth; namely, the vitamins. The significance of iodine in small amounts had, of course, been realized since the beginning of the century, following Baumann's discovery in 1895 that the element is a regular constituent of the thyroid gland. Investigation as to the occurrence and possible function of "trace" elements in both plant and animal life is now

exceedingly active. Boron, zinc and manganese have all been shown essential to the growth of maize; boron to a great variety of dicotyledonous plants; without zinc, wheat and barley die in the early stages of growth, and buckwheat, sunflowers, broad beans and red kidney-beans never come to full maturity or produce seed.

In a book published under the title "The Most Nearly Perfect Food" the authors,³ describing the importance of milk, point out that it is particularly useful in the diet because it contains all the minerals found in the body. It has calcium, phosphorus, potassium, sodium, magnesium, iron, chlorine, iodine, sulphur and other minerals, in addition to carbon, hydrogen, oxygen and nitrogen. Three of these minerals, calcium, phosphorus and iron, deserve special discussion because of their unusual importance.

The difficulties of investigation are not inconsiderable in any search of "trace" elements in biologic materials. It has been greatly aided in recent years by the use of the spectrograph, which has revealed the ubiquitousness of many elements in the tissues of living organisms. Three extensive reports⁴ are now available regarding the components of milk. In view of the fact that the samples examined have come from diverse sources in Europe, Great Britain and the United States, it is not surprising that there are some divergencies in the reported observations. Contaminations with extraneous materials are not easily avoided.

The results on the so-called biologically rare elements in milk examined in the School of Hygiene and Public Health at the Johns Hopkins University in Baltimore include the following elements found in small quantities (traces) in all milk samples: barium, boron, copper, iron, lithium, rubidium, strontium, titanium and zinc. Of these, barium is the only one that has not been reported previously. The presence of aluminum and manganese was not definitely demonstrated, although these elements were present in the feed mixture. The presence of antimony, arsenic, bismuth, cesium, cobalt, cadmium, fluorine, germanium, gold, indium, lanthanum, mercury, molybdenum, nickel, osmium, palladium, silver, zirconium, chromium, lead and tin could not be detected, although Zbinden concludes that the last three of these elements, chromium, lead and tin, are present in European milks.

The nutritional importance of iron among these "trace" elements is thoroughly established; there is little doubt of a possible beneficent rôle of traces of copper in hematopoiesis. Manganese is regarded as essential for a complete diet, while fluorine, aluminum and nickel have been found to be dispensable.⁵ The

1. Osborne, T. B., and Mendel, L. B.: The Inorganic Elements in Nutrition, *J. Biol. Chem.* 34: 131 (April) 1918.

2. Rose, Mary S.: The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body, *Yale J. Biol. & Med.* 4: 499 (March) 1932; some of the items cited are taken from this review.

3. Crumrine, S. J., and Tobey, J. A.: The Most Nearly Perfect Food, Baltimore, Williams & Wilkins Company, 1929.

4. Wright, N. C., and Papish, Jacob: Science 69: 78 (Jan. 18) 1929. Zbinden, C.: Laid 11: 114, 1931. Blumberg, H., and Rask, O. S.: The Spectroscopic Analysis of Milk Ashes, *J. Nutrition* 6: 285 (May) 1933. Blumberg, H., and McCollum, E. V.: *J. Biol. Chem.* 92: 651 (1933). G. R.: *J. Nutrition* 6: 163 (March) 1933. McCollum, E. V., R. O. S., and Becker, J. Ernestine: *J. Biol. Chem.* 77: 753 (May) 1928.

necessity for the presence of zinc has been debated. It has been apparent for some time that the zinc content of the tissues is somewhat mobile and depends, to some extent, on the content in the diet. The latest research, by Newell and McCollum⁶ at the Johns Hopkins University involved the use of a diet which supported growth in animals although it had a zinc content of the order of 10^{-7} part, or less. Therefore, as the Baltimore investigators conclude, zinc is probably not an essential nutritional factor in the growth of animals.

Current Comment

CHLOROPHYLL AND THE DIET

The interest that has been awakened in recent years as to the possible nutritive significance of some of the plant pigments that are a part of common foods has repeatedly been directed to the widely occurring substance chlorophyll. There are several immediate reasons for this attitude. Chlorophyll is a compound of importance for the development of vegetable tissues. Green leaves constitute a wholesome food intake for many animal species. Consequently, as a recent writer has remarked, many practical observers have reached the superficial conclusion that chlorophyll in fresh green plant tissues helps to produce the good nutritive results noted in herbivora. Added to this conjecture is the more rigorously established fact that chlorophyll is related in chemical structure to the respiratory pigment hemoglobin, an essential in animal welfare. The hope that, owing to the existence of organic groups of a similar nature in both chlorophyll and hemoglobin, the plant pigment might prove to be effective in certain types of anemia in which regeneration of hemoglobin is called for has proved to be rather futile. It has been stated that chlorophyll, in addition to its hematopoietic properties, increases the feeling of vigor and well being.¹ These are, of course, features of health that cannot easily be evaluated in a scientific way. It might be expected, however, that the newer methods of nutrition research on laboratory animals would permit the demonstration of any specifically beneficial effects of a substance assumed to have the potentialities gratuitously ascribed to chlorophyll. Studies recently completed by Edwards and Holley² at the Georgia Experiment Station have furnished nothing better than disillusionment as to the hoped for nutrient potencies of chlorophyll. Apparently the greater part of the ingested pigment is eliminated as pheophytin in the feces. It should be recalled, however, that edible plant products rich in the green pigment are likely to contain the potent pigment carotene and vitamins present in less conspicuous forms. Such a parallelism does not warrant indirect and undue inferences as to any physiologic value of chlorophyll for the animal organism.

6. Newell, J. M., and McCollum, E. V.: *Studies on the Role of Zinc in Nutrition*, J. Nutrition 6: 289 (May) 1933.

1. Burgi, E.: *Ueber die therapeutische Bedeutung des Chlorophylls*, Deutsche Med. Wchnschr. 48: 1159 (Sept. 1) 1922.

2. Edwards, F. R., and Holley, K. T.: *Some Effects of Chlorophyll in the Diet of the Albino Rat*, Bull. 173, Georgia Experiment Station, December, 1932.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

July 25. Babes in the Woods.

July 27. Ringworm.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

July 29. Endocrine Glands in Children.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

State Board Elects.—Dr. Ira E. Huffman, Tucson, was elected president of the Board of Medical Examiners of the State of Arizona at its meeting, June 27. Others elected are Dr. Clarence W. Adams, Globe, and Charles C. Bradbury, D.O., Phoenix, vice presidents, and Dr. John H. Patterson, Phoenix, secretary.

CALIFORNIA

A New Roentgen Club.—The Pacific Roentgen Club has recently been organized by California roentgenologists, with Dr. Lowell S. Goin, Los Angeles, as chairman and Dr. Leo H. Garland, San Francisco, as secretary. The object of the club is to keep the practice of radiology in diagnosis and treatment of disease in the hands of licensed practitioners of medicine. The club registered objection to the exploitation of any physician for the gain of nonmedical concerns. It charged that, although California laws prohibit practice of medicine by corporations, many corporations are in fact practicing radiology. A program is now being mapped out to carry through the principles set forth: to prevent further inroads on the practice of the specialty, to improve standards and to obtain recognition for radiology as a branch of medicine.

History of Society.—The early history of the San Francisco County Medical Society was brought to light recently through the finding of a volume entitled *Pacific Medical and Surgical Journal and Medical Press*. These pages revealed that the society was formally organized in 1868 with Dr. J. P. Whitney as president. They contain the annual address of Dr. Henry Gibbons before the society in 1869, and those of "Edwin Bentley, Assistant Surgeon, U. S. A., J. P. Whitney, M.D., and C. B. Holbrook, M.D.," for the years 1870, 1872 and 1873, respectively. It appeared that there had been a society in existence before 1868, but that it was not active. Issues of the *San Francisco Medical Press* which were also found in the book were volume 1, numbers I and II, January and April, 1860, and volume 2, number VI, April, 1861.

CONNECTICUT

Dr. Osborne Receives Chompret Prize.—Dr. Oliver T. Osborne, emeritus clinical professor of therapeutics, Yale University School of Medicine, New Haven, was awarded the Chompret Prize, established by the International Academy of Stomatology and the American Stomatological Association, at the recent annual meeting of the latter. Dr. Osborne received this award for his "contributions to the science of stomatology and for his untiring labors to bring dentistry and medicine to a plane of better understanding and appreciation of their common problems for the good of mankind." The prize was established this year in honor of J. Chompret, professor of

stomatology, French School of Stomatology, Paris, to commemorate the first decade of continuous labor of American dentists in scientific stomatology.

ILLINOIS

Courses in Pediatrics.—A series of one day lecture courses in pediatrics, to be held in eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the education committee of the state medical society, was inaugurated in Bloomington, McLean County, July 13. The most recent information on problems concerning the care of children and the prevention of childhood diseases will be discussed in these courses, the second of which is opening today, July 22, in Warren County.

Chicago

University Health Service Revised.—The University of Chicago Health Service plan for the staff was separated from the University Health Service conducted for students, July 1, and reorganized as a special clinic in the University Clinics under the direction of Dr. George F. Dick, professor and chairman of the department of medicine. The new clinic will be on the third floor of the medical (west) wing of Billings Hospital. Members of the professional staff with the degree of doctor of medicine may now report directly to the special clinic in which they desire service, but other employees must report to the health service first. On request, at the discretion of the physician in charge, the latter may be referred to special clinics as necessary. Under the revised program, Dr. Luke W. Hunt has been appointed clinical assistant in the department of medicine in charge of the health service for the staff. The health service program for the staff and employees of the clinics group at the university was inaugurated, Dec. 1, 1931. Contributions of \$1 a month were deducted from their salaries and formed a fund which was used only for defraying the costs of medical and hospital service to the individual participants of the plan (THE JOURNAL, Dec. 5, 1931, p. 1715).

Provident Hospital Dedicated.—An informal program marked the dedication of the new \$3,000,000 Provident Hospital and training medical center for Negroes, June 1, although it had been open for business since May 15. Mr. A. L. Jackson, president of the board of trustees, presided, and speakers included Mr. Edwin R. Embree of the Julius Rosenwald Fund; Col. Albert A. Sprague; Dr. Henry S. Houghton, director of the University Clinics; Dr. Franklin C. McLean; Mrs. George Cleveland Hall, president of the woman's auxiliary board of the hospital, and Admiral Norman J. Blackwood, medical director. The institution is located in the remodeled building of the old Chicago Lying-In Hospital on Fifty-First Street. Previously it had been operating more than forty years at 16 West Thirty-Sixth Street. The training center is the outgrowth of an agreement entered into between the Provident Hospital and the University of Chicago in 1930, with the objective of improving the standard of medical practice and nursing among the colored race. Preference in appointments is to be given to colored physicians, although individual appointments are to be determined only on personal and professional qualifications regardless of race. About \$1,250,000 was used for the purchase and remodeling of buildings formerly occupied by the Chicago Lying-In Hospital. The gift of \$1,000,000 by the General Education Board of the Rockefeller Foundation will be administered by the University of Chicago for teaching purposes in the hospital, and the remainder of the fund will be used for endowment and equipment. Dr. Blackwood will continue as medical director, a position he has held since April, 1930.

IOWA

Physicians Honored in Anniversary Celebration.—The Henry County Medical Society celebrated its thirtieth anniversary in New London, June 13, and at the same time paid honor to Dr. Otto A. Geeseka, Mount Pleasant, upon his completion of fifty-five years in the practice of medicine. Dr. William S. Lessenger reviewed the thirty years of the society's history. He, Dr. Geeseka and Dr. Walter A. Sternberg, Mount Pleasant, and Dr. Garrett M. Van Ausdall, New London, are the only living members of the early organization. Dr. Geeseka was presented with a gift.

Society News.—At the summer meeting of the Austin Flint Cedar Valley Medical Society, in Cedar Falls, June 20, speakers included Drs. Sylvester W. Barnett on "Mononucleosis"; Thomas J. Irish, Forest City, "Prophylaxis and Treatment of Gas Bacillus Infection"; Merle J. McGrane, New Hampton, "Report of Series of Perforated Peptic Ulcers," and John C. Hancock, Dubuque, "The Autopsy." Clinics were conducted

by Drs. Virgil S. Counseller, Rochester, on "Carcinoma of Bladder"; Glenn E. Harrison, Mason City, on pediatrics; Claude F. Dixon, Rochester, Minn., surgery, and Cecil S. O'Brien, Iowa City, the eye. Prof. Roy L. Abbott of Iowa State Teachers College, Cedar Falls, made an after dinner speech on "The Doctor of 1999."

LOUISIANA

Society News.—The Orleans Parish Medical Society was addressed at New Orleans, June 26, among others, by Drs. Ralph L. Lawrence on "Lung Abscess," and Marion K. King, "Cardiovascular Syphilis."—Drs. Benjamin T. Ferguson, Waverly, and John L. Kelly, Oak Grove, addressed a meeting of the Tri-Parish Medical Society (East and West Carroll and Madison parishes), in June, on diseases of the prostate and otitis media, respectively.—Recent speakers before the Bi-Parish Medical Society were Drs. Cecil Lorio, Baton Rouge, and C. Jeff Miller, New Orleans, on "Problem of the Thymus, with X-Ray Plates" and "Chronic Cervicitis," respectively.—The Third District Medical Society was addressed in Franklin, June 8, by Drs. Leon J. Menville, on "Bone Infections"; Maurice J. Gelpi, "Correlation of Irradiation and Surgery in the Treatment of Malignancy," and Daniel N. Silverman, "Treatment of Certain Common Disorders of the Intestinal Tract." All were from New Orleans.—At a meeting of the Seventh District Medical Society in Elton, June 22, Dr. Stanford Chaille Jamison spoke on "Practical Points on Physical Diagnosis"; Hiram W. Kostmayer, "Use of the Hormones in Gynecologic Practice," and Charles J. Bloom, "Infant Feeding." The speakers were from New Orleans.

MARYLAND

Conference on Antisepsis.—Sixty-five chemists, bacteriologists, physicians and surgeons attended a conference in Baltimore, June 26, sponsored by Johns Hopkins University to discuss ways of combating disease by antisepsis. Speakers included Justina H. Hill and Edwin C. White, Ph.D., instructor in urology and associate in chemical urology, respectively, at Johns Hopkins, and Fitzgerald Dunning and Wilton C. Harden. Drs. Hugh H. Young and Joseph Colt Bloodgood were guests of honor at a dinner, which concluded the session.

MICHIGAN

Cancer Clinic at University Hospital.—The board of regents of the University of Michigan approved the establishment of a cancer clinic at the University Hospital, June 16. The clinic will be operated by a committee composed of members of the hospital staff, under the supervision of Dr. Harley A. Haynes, medical director of the institution.

Personal.—Dr. William J. Seymour was the recipient of an honorary degree of doctor of laws at the fiftieth annual commencement of the University of Detroit, June 9, in Detroit.—The College of the City of Detroit conferred the degree of master of science in gynecology on Dr. David M. Davidow at its annual commencement, June 6, and the honorary degree of doctor of letters on Dr. Stanley G. Miner.—Dr. Charles J. Scavarda has resigned as health officer of Flint to enter private practice.

Peninsula Meeting.—The Upper Peninsula Medical Society will hold its annual meeting in Escanaba, August 10-11. On the program will be Drs. Frank A. Kelly, Detroit, speaking on "Hernia with Spinal Anesthesia"; Moses Cooperstock, Marquette, "Management of Lobar Pneumonia in Childhood"; Damon A. Brown, Madison, "Chronic Infection of the Prostate and Urethra," and Charles L. Brown, Ann Arbor, "Consideration of Digitalis, Diuretics and Diet." Drs. James D. Bruce, Ann Arbor, and Frederick C. Warnshuis, Grand Rapids, will discuss, respectively, "An Essential in Medical Education and in Medical Practice" and "Medical Economics Applied to Practice." Speakers in the second day's session will be Dr. Norman F. Miller, Ann Arbor, on "Lower Urinary Tract Infections"; Dr. Brown, "Urogenic Heart Disease, Hyperthyroidism and Myxedema," and Dr. Warnshuis, "Head Injuries."

MISSISSIPPI

Reports Wanted for State Board File.—The Mississippi State Board of Health is interested in obtaining copies of the annual report for 1877 and the biennial report for 1886-1887, to complete the file since its organization in 1877. The board recently obtained the reports for the years 1890-1891 and 1894-1895, which had also been missing.

Society News.—Dr. Henry W. E. Walther, New Orleans, was guest speaker before the Pike County Medical Society in McComb, July 6, on "Transurethral Prostatic Resection."

At a meeting of the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, June 13, the speakers were Drs. William P. Robert on "Preventing Diphtheria in Children"; Hiram C. Sheffield, Jackson, "Dementia Praecox," and Edley H. Jones, "Nasal Allergic Symptoms."

MISSOURI

Clinical Award.—The St. Louis Clinics is offering an annual award of \$100 and a certificate of award to the member of the St. Louis Medical Society who presents the best paper at meetings of the society during the year beginning January 1. The prize will be presented at the conference of the St. Louis Clinics in May, 1935.

Members Expelled.—Drs. Robert P. Miller and Eugene Carbaugh, Kansas City, were expelled from membership by the Jackson County Medical Society, June 27, for unprofessional conduct. According to the bulletin of the society, this action was taken on account of the physicians' alleged activities in connection with the Steuben Health Clinic and the Midwest Health Foundation, respectively.

Changes on Faculty at St. Louis University.—New appointments to the staff of St. Louis University School of Medicine, according to an announcement, June 21, include Drs. Julius H. Gross as assistant professor of ophthalmology; Jerome I. Simon, assistant professor of surgery, and Joseph L. Gross and Vincent J. LoPiccolo, assistant professors of medicine. Other changes on the faculty include promotion of the following physicians:

Eugene T. Senseney, professor of otolaryngology.
Samuel B. Westlake, associate professor of otolaryngology.
Alexander E. Horwitz, associate professor of orthopedic surgery.
Franklin H. Albrecht, associate professor of orthopedic surgery.
Fritz Neuhoff, associate professor of internal medicine.
Emmett P. North, assistant professor of ophthalmology.
Julius A. Rossen, assistant professor of pediatrics.
John W. Stewart, assistant professor of surgery.
Robert D. Alexander, assistant professor of surgery.
Eugene Lee Myers, assistant professor of otolaryngology.
Eugene Lee Shrader, assistant professor of internal medicine.

Dr. John Zahorsky was made director of the department of pediatrics; previously he had been chairman.

MONTANA

Spotted Fever.—Forty-five cases of Rocky Mountain spotted fever had been reported to the Montana state health department from various sections of the state, according to newspapers, June 17.

NEW YORK

Society News.—Dr. Nelson K. Fromm addressed the Medical Society of Albany County, June 28, on "Bilateral Cervical Rib," and Robert A. Robinson, D.D.S., showed a motion picture of operations for removal of impacted teeth and cyst of the superior maxilla. At the quarterly meeting of the Ontario County Medical Society, Geneva, July 11, Dr. George M. Gelsco, Rochester, discussed clinical aspects of trichomonas vaginalis and Dr. George W. O'Grady, Rochester, pathologic aspects.

Hospitals Adopt Uniform Dispensary Admission Plan.—Rochester hospitals and dispensaries have recently adopted a uniform plan for admission to the outpatient departments. All patients applying for treatment are first asked whether they have a family physician or have recently been under the care of a physician. If either question is answered affirmatively, the applicant is requested to return to the physician for a recommendation for admission. If the condition demands immediate attention, the admitting officer communicates with the physician by telephone. If the latter cannot be reached, the patient is admitted temporarily and a letter is sent to the physician asking his approval. An income table has been drawn up as a guide in determining eligibility for dispensary treatment. If an applicant is found ineligible and has no family physician to whom he may be referred, the hospital authorities recommend at least three members of the hospital staff. Patients who are able to afford services of a private practitioner and refuse to do so are to be denied admittance to the dispensaries. Every effort will be made to prevent "shopping," and patients will be transferred from one dispensary to another only on request of the referring dispensary. Other regulations concerned provision of drugs for both acute and chronic cases, surgical appliances and glasses, and cooperation with welfare agencies. A permanent joint committee representing the hospitals and the Medical Society of Monroe County was established, with Dr. Sol J. Appelbaum as chairman. To this committee will be referred all matters of common interest to hospitals, outpatient departments and dispensaries.

New York City

Changes at Columbia.—Dr. Bernard Sachs has been appointed professor of clinical neurology and Dr. Harry Aranow clinical professor of obstetrics at Columbia University College of Physicians and Surgeons. Dr. I. Ogden Woodruff has been promoted to professor of clinical medicine.

Changes at Rockefeller Institute.—Dr. Cornelius P. Rhoads has been promoted from associate to associate member of the Rockefeller Institute for Medical Research and Dr. Theodore J. Abernathy has been appointed resident physician at the institute's hospital. Lawrence R. Blinks, Ph.D., associate in the division of general physiology, has accepted an appointment as associate professor of plant physiology at Stanford University, Calif.

Dr. Albee Receives Bowdoin Prize.—Bowdoin College, Brunswick, Maine, has awarded to Dr. Fred H. Albee the first Bowdoin Prize for "the graduate of the college who has made the most distinctive contribution in any field of human endeavor." This prize was established as a memorial to William J. Curtis, a graduate of Bowdoin in 1875, to be awarded every five years. It is to be four fifths of the income from a fund of about \$20,000. Dr. Albee was graduated from Bowdoin in 1917.

Hospital News.—According to the annual report of the New York Post-Graduate Hospital for 1932, recently made public, the hospital has finished fifty years of service, during which time 263,951 patients were treated. In addition 1,599,022 persons were treated in the outpatient department and more than 29,000 physicians received graduate training in the half century. Dr. Roberto Alessandri, Rome, Italy, gave an address, June 19, at the New York Polyclinic Medical School and Hospital, on "Postoperative Peptic Ulcer."

NORTH CAROLINA

Society News.—Dr. Douglas Vanderhoof, Richmond, Va., was guest speaker at a meeting of the Sixth Council District of the Medical Society of North Carolina, June 15, in Wake Forest. Dr. Vanderhoof discussed "Chronic Duodenal Occlusion." Among other speakers were Drs. Harold L. Amoss, Durham, on "Serum Treatment of Hemolytic Streptococcal Pneumonia" and Adlai S. Oliver, Raleigh, "Obstetric Analgesia." Dr. Hubert B. Haywood, Raleigh, was elected president. The North Carolina Urological Association met in Greensboro recently with the following speakers: Drs. John H. Neff, University, Va., on "Renal Calculi"; Sidney S. Smith, Jr., Raleigh, "Renal Infections"; Robert W. McKay, Charlotte, "Aneurysm of Renal Artery"; Andrew J. Crowell, Charlotte, and Edwin P. Aylea, Durham, both on prostatic resection.

Pediatric Seminar.—The thirteenth Southern Pediatric Seminar will be held at Saluda, July 24-August 5. Clinical material is provided in two children's hospitals at Saluda. Dr. William A. Mulherin, Augusta, Ga., is dean of the course, Dr. Frank Howard Richardson, Black Mountain, vice dean, and Dr. D. Lesesne Smith, Saluda, registrar. Among the lecturers will be:

Dr. Lawrence T. Royster, University, Va.: Upper Respiratory Infections; Physical Examination; Celiac Disease.
Dr. William L. Funkhouser, Atlanta: Congenital Feeble-mindedness; Habit Formation; Vomiting as a Symptom.
Dr. Robert A. Strong, New Orleans: Convulsions.
Dr. William Weston, Columbia, S. C.: Fundamentals of Nutrition.
Dr. Willard C. Davison, Durham: Diarrhea; Kidney Diseases.
Dr. Horton R. Casparis, Nashville: Tuberculosis.
Dr. Philip F. Barbour, Louisville, Ky.: Heart Conditions in Children; Endocrines.
Dr. Kenneth M. Lynch, Charleston, S. C.: Pathologic Conferences.
Dr. Allen J. Jervy, Tryon: Surgical Conditions in Children.
Dr. Oliver W. Hill, Knoxville, Tenn.: Influenza: Its Complications and Sequelae; Intracranial Hemorrhage: Its Symptoms and Manifestations.

OHIO

Personal.—Dr. Robert N. Wright has been appointed physician to Wooster College at Wooster, succeeding Dr. Herbert A. Wildman, who will enter private practice in Michigan. Dr. George D. Lowry has resigned as physician to Ohio Wesleyan University, Delaware, to enter private practice. Dr. Carey P. McCord, Cincinnati, received the honorary degree of doctor of laws, May 30, from Howard College, Birmingham, Ala., in recognition of his services in reducing the occupational hazards in the life of industrial workers. Dr. Myron D. Miller, assistant superintendent of Franklin County Tuberculosis Sanatorium, Columbus, for four years, has been made superintendent to succeed the late Dr. Charles O. Probst. Dr. Emerson M. Blake, Columbus, received a provisional appointment as assistant superintendent, subject to approval by the state civil service commission. Dr. Claud C. Burton of the staff of the Veterans' Administration Hospital, Lexington, Ky., has been appointed director of surgery at the National Military Home near Dayton, succeeding the late Dr. Samuel

B. Woodward.—Dr. Donald E. Yochem, Columbus, has been appointed superintendent of the Licking County Tuberculosis Sanatorium, Newark, to succeed Dr. Homer M. Austin.—Dr. William H. Carey, Bellefontaine, recently resigned as health officer of Logan County, after thirteen years' service; he was succeeded by Dr. Lee E. Traul, Middleburg.

PENNSYLVANIA

Increase in Tuberculosis.—More cases of tuberculosis were reported in Pennsylvania for 1932 than for the two previous years. The number of cases was 7,805, but the death rate of 54.6 per hundred thousand of population, representing 5,364 deaths, was the lowest in the history of the state. About two thirds of those who died were under 45 years of age.

Personal.—The Parent-Teacher Association of Brentwood High School gave a banquet, May 19, in honor of Dr. William H. Goodpaster, who was for sixteen years president of the school board and who is still school physician.—Dr. Mary M. Wolfe, superintendent of Laurelton State Village, received an honorary degree at the annual commencement of Bucknell University, Lewisburg.—The Cambria County Medical Society gave a testimonial dinner in honor of Dr. Daniel S. Rice, Ebensburg, observing his completion of fifty years in practice, July 13, at the regular meeting at the Chetremont Country Club near Cherry Tree. Dr. Jesse Lynn Mahaffey, state health officer of New Jersey, Trenton, was the guest speaker.

Philadelphia

Hospital News.—The new tuberculosis unit of Philadelphia General Hospital, finished but unused for sixteen months, was opened for patients, June 12. Ninety men from the old male tuberculosis unit were moved in immediately and it was expected that 130 women patients would be moved by the end of June.

Personal.—Yale University conferred the degree of doctor of science on Alfred Newton Richards, Sc.D., professor of pharmacology, University of Pennsylvania School of Medicine, at its recent convocation.—Dr. Thomas A. O'Brien received the honorary degree of doctor of laws at the annual commencement of Villanova College, Villanova, June 8.—Dr. Mary M. Spears was recently elected the first woman member of the American Proctologic Society. She is clinical professor of gastro-enterology at the Woman's Medical College of Pennsylvania.

TENNESSEE

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended July 8, indicate that the highest mortality rate (19) appears for Memphis and the rate for the group of cities as a whole, 9.6. The mortality rate for Memphis for the corresponding period last year was 20 and for the group of cities, 9.7. The annual rate for eighty-five cities for the twenty-seven weeks of 1933 was 11.5, as compared with a rate of 11.9 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

VIRGINIA

Society News.—Dr. James Edwin Wood, Jr., University, addressed the Rockingham County Medical Society, May 15, on digitalis.—Dr. Lawrence T. Royster, University, addressed the Norfolk County Medical Society, Norfolk, May 29, on "Rheumatism and the Rheumatic Heart in Children."—At the semiannual meeting of the Northern Neck Medical Association at Heathsville, May 25, speakers included four Richmond physicians: Drs. John Shelton Horsley, Jr., "Sieve Graft"; Frank S. Johns, "Extra-Uterine Pregnancy"; William Wallace Gill, "Ocular Headaches," and Thomas E. Hughes, "Bronchoscopy and Esophagoscopy."—Dr. Frank R. Hopkins, Lynchburg, addressed the Lynchburg Academy of Medicine, June 5, on "Diabetes in Childhood."—Among speakers at a meeting of the Roanoke Academy of Medicine, June 5, were Drs. Frank Helvestine, Jr., on "Consecutive Perforations of Stomach by Peptic Ulcer" and William B. Huff, "Schiller's Lugol Test as an Aid to the Early Diagnosis of Cervical Cancer."—Dr. Marvin Pierce Rucker, Richmond, addressed the Medical Association of the Valley of Virginia, May 25, on "Painless Childbirth."—Dr. John B. Fisher, Midlothian, was elected president of the Alumni Association of the Medical College of Virginia at the recent annual meeting.—At the quarterly meeting of the Southside Virginia Medical Association in LaCrosse, June 13, the following speakers presented a

symposium on diseases of the kidneys: Drs. Kinloch Nelson and Algernon S. Hurt, Jr., Richmond; Allen Barker and Herbert C. Jones, Petersburg, and William T. Gay, Suffolk.

WASHINGTON

Society News.—The King County Medical Society held a special meeting in Seattle, June 15, to hear an address by Dr. George H. Whipple, Rochester, N. Y., on "Anemia, Liver Function and Hemoglobin Production."—The Seattle Academy of Surgery held its annual meeting at Harborview Hospital, July 12-13, with Drs. William Boyd, professor of pathology, University of Manitoba Faculty of Medicine, Winnipeg, and Alfred T. Bazin, professor of surgery, McGill University Faculty of Medicine, Montreal, as guests. Dr. Boyd discussed interstitial tumors of bone and Dr. Bazin, embryologic development of the umbilicus and urachus.

WISCONSIN

Dr. Miloslavich Goes to Yugoslavia.—Dr. Edward L. Miloslavich, formerly professor of pathology and bacteriology, Marquette University School of Medicine, Milwaukee, has accepted an appointment as director of the Medical College Institute at the Royal University, Zagreb, Yugoslavia, and will soon leave for the new position. Dr. Miloslavich was professor of pathologic anatomy at the University of Vienna, Austria, before coming to the United States.

WYOMING

Spotted Fever.—Seventy-four cases of Rocky Mountain spotted fever had been reported to the state department of health of Wyoming for the season up to June 28. Ten deaths had occurred.

GENERAL

License Lost.—The California State Board of Medical Examiners announced, June 23, that the license of Dr. Shelby P. Phipps Strange, San Francisco, had been reported lost. The license was issued to Dr. Strange, a graduate of Cooper Medical College, Aug. 28, 1912.

Journal of Pharmacology Transferred to Society.—At the annual meeting of the American Society for Pharmacology and Experimental Therapeutics in Cincinnati in April, Dr. John J. Abel, Baltimore, founder and editor of the *Journal of Pharmacology and Experimental Therapeutics* for twenty-four years, transferred the journal to the society as its official organ. With Carl Voegtlin, Ph.D., Washington, D. C., and Dr. Reid Hunt, professor of pharmacology, Harvard University Medical School, Boston, Dr. Abel formed the original corporation which sponsored the journal. Dr. William deB. MacNider, professor of pharmacology, University of North Carolina Medical School, Chapel Hill, was elected president of the society; Arthur L. Tatum, Madison, Wis., vice president, and Dr. Velyien E. Henderson, Toronto, secretary.

Special Board Examinations in Dermatology.—The American Board of Dermatology and Syphilology will hold written examinations for physicians who have limited their practice to this branch of medicine for at least five years (group B), Saturday, October 28, in New York, St. Louis, Boston, Cleveland, San Francisco, Philadelphia and Chicago. Applicants are required to submit at this time typewritten reports of ten cases personally observed, preferably in private practice. Oral examinations for both group A (physicians who have limited their practice for at least ten years) and group B will be held in New York, December 15 and 16. All who expect to take the examinations in either group must send their applications and credentials to the office of the secretary before September 1. Application blanks and further information may be obtained from the secretary, Dr. C. Guy Lane, 416 Marlborough Street, Boston.

Resolutions of Catholic Hospital Association.—Warning that all plans for financial remuneration to hospitals or to the medical and nursing profession should be considered first for the effect they might have on the medical service rendered by the institutions was contained in a resolution adopted at the closing meeting of the Catholic Hospital Association of the United States and Canada in St. Louis, June 16. The resolution declared that although medical and hospital economics are urgent they cannot be considered dominant and the problems arising from them must be solved with relation to their significance to the central problem: the provision of effective medical care to the patient. Another resolution adopted at the same time declares the adherence of the association to the principle enunciated by the pope that "birth control is an offense against the law of God and of nature" and that therefore hos-

pitals of the association will tolerate no practices contrary to this principle. In a third resolution the association stated its belief that care of the indigent is not solely a governmental responsibility.

Warning Against Impostor.—A Wyoming physician has reported to THE JOURNAL that a man using the name "D. P. Gordon" is preying on physicians in Colorado and Wyoming, claiming to represent a "Ukiah Grape Products Company" of New York. He is said to be in Wyoming at present, having already "visited" many physicians and dentists in Colorado. He is reported to be about 58 years old, well dressed, of heavy build, and to have a pleasing personality. The supervisor of permits of the Bureau of Industrial Alcohol in Denver reports that the Colorado State Medical Society and officers of the law are looking for the man and that as far as is known there is no such firm as the Ukiah Grape Products Company. In THE JOURNAL, Sept. 3, 1932, warning was published of a man posing as a salesman in Michigan for this firm. The physician reporting at that time explained that the alleged salesman declined to have the usual official papers made out, saying that his firm saved the customer that trouble. When the victim did not receive his order, he wrote to the firm but his letter came back marked "Removed—left no address."

Radio Talks.—The American Public Health Association is sponsoring a series of weekly health broadcasts over the "national farm and home network" of the National Broadcasting Company. The series is under the direction of a committee of the association appointed at the last annual convention in Washington, D. C., consisting of Drs. John A. Ferrell, Haven Emerson and Kendall Emerson, New York; Fred O. Tonney, Chicago, and Louis I. Dublin, Ph.D., New York. All statements used in the talks, which will be given under the general title "A Nation's Investment in Health," will be censored by the committee. Future speakers and subjects are as follows:

July 26, Dr. Kendall Emerson, The Political Health Conscience.
August 2, Dr. Charles E. North, New York, Milk Supplies.
August 9, George T. Palmer, Dr.P.H., New York, Safeguarding Child Life.
August 23, Dr. George H. Ramsey, New York, Epidemiology.
August 30, Dr. Fred O. Tonney, Laboratories and Research.
September 6, Dr. Lawrason Brown, Saranac Lake, N. Y., Tuberculosis.
September 13, Louis I. Dublin, Ph.D., Health Statistics.
September 27, Dr. Alfred F. Hess, New York, Safeguarding Infant Life.
October 4, Charles-Edward A. Winslow, Dr.P.H., New Haven, Conn., Costs and Results.

Broadcasts have already been presented by Dr. Tonney, on "The Health Budget"; Dr. Herman N. Bundesen, Chicago, "Sane Curtailment of Health Budgets" and George W. Fuller, New York, "Water Supplies and Health." Suggestions for subjects of further broadcasts are solicited from physicians and the public. They should be addressed to the American Public Health Association, 450 Seventh Avenue, New York.

Contaminated Milk Responsible for Thirty Epidemics.—Contaminated milk caused thirty epidemics in 1932, according to the annual report of Dr. Samuel J. Crumline, New York, field secretary, presented before the annual meeting of the Conference of State and Provincial Health Authorities of North America in Washington, D. C., June 5-6. In addition, two epidemics were traced to ice cream and one to cheese. Raw milk was the source of the infection in twenty-eight outbreaks. In one traced to ice cream, the owner of the store where it was sold had had typhoid fever twenty-five years previously and had a history of gallbladder infection, while, in the cheese epidemic, the milk used for the cheese had not been pasteurized. Four fewer epidemics occurred in 1932 than in 1931 and 353 fewer cases of sickness. Thirty-nine deaths from the typhoid epidemic caused by contaminated cheese were responsible for an increased number of deaths. For the second time in recent years there was no milk-borne epidemic of diphtheria in 1932. Fourteen epidemics were traced to carriers, fourteen to a case of sickness on dairy premises, one to infection from bottles and equipments and one to infection from a dairy water supply. The source of three epidemics was reported unknown. Although most of the outbreaks happened in the summer months, eight occurred in September. No epidemic was reported for November, repeating the record of 1931. The distribution of epidemics by community population showed that 48.5 per cent occurred in towns or rural communities of less than 2,500 population, indicating that an increasing proportion of milk-borne epidemics are in the smaller cities and rural communities which lack effective milk supervision and control, and where pasteurized milk is not generally available. These figures were based on fifty-nine reports received from all the provinces of Canada, all but two states, the District of Columbia and all the territorial possessions but two.

Society News.—The American Association of School Physicians will meet in affiliation with the American Public Health Association in Indianapolis, October 9-12.—Dr. Frederick H. Lamb, Davenport, Iowa, was chosen president-elect of the American Society of Clinical Pathologists at the recent annual meeting in Milwaukee. Dr. Alvin G. Foord, Pasadena, Calif., was installed as president; Dr. John J. Seelman, Milwaukee, elected vice president, and Dr. Alfred S. Giordano, South Bend, Ind., reelected secretary. Cleveland was chosen for the place of the next annual meeting.—The western branch of the American Urological Association will hold its ninth annual meeting in Vancouver, B. C., August 3-5. Guest speakers will include Drs. Hermon C. Bumpus, Jr., Rochester, Minn., on "Preoperative Preparation and the Postoperative Care in Cases of Prostatic Resection"; Winfield Scott Pugh, New York, "Electrosurgery: Its Application to Urinary Pathology," and Guy L. Hunner, Baltimore, "Calculus of the Upper Urinary Tract."—The tenth annual meeting of the Association of New York Central Lines Surgeons was held in Chicago, June 19-20. Drs. Gilbert FitzPatrick, Karl A. Meyer and Max Cutler presented a symposium on cancer and other speakers included Drs. George W. Hall, Chicago, on "Diagnosis of Head Injuries Without Skull Fracture"; Dean Lewis, Baltimore, President, American Medical Association, "Injuries of the Soft Parts"; Philip H. Kreuscher, Chicago, "Injuries to the Knee Joint." Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, gave an address following the annual dinner.—The annual meeting of the Acro Medical Association of the United States will be held in Chicago, September 2-4, at the Palmer House, under the presidency of Dr. Frederick C. Warnshuis, Grand Rapids, Mich. Dr. David S. Brachman, Detroit, is secretary.—The National Medical Association will hold its annual convention in Chicago, August 13-14. Among speakers will be Drs. William H. Walsh, Chicago, on "Group Purchase of Hospital Service" and Rosco G. Leland, Chicago, "The Insurance Principles in Medical and Hospital Practice."—Dr. William W. Bauer, director, Bureau of Health and Public Instruction, American Medical Association, addressed the National Education Association, Chicago, July 5, on "School and Home Cooperation for the Health and Protection of Children."—The American Congress of Radiology, including meetings of the Radiological Society of North America, the American Roentgen Ray Society, the American Radium Society and the American College of Radiology, will be held in Chicago at the Palmer House, September 25-30.

FOREIGN

Personal.—Sir Charles Arthur Kinahan Ball, Dublin, has been appointed regius professor of surgery at the University of Dublin in succession to the late Sir William Taylor.—Dr. Ivan de Burgh Daly, professor of physiology, University of Birmingham, will succeed Sir Edward Sharpey-Schäfer on his retirement from the chair of physiology at the University of Edinburgh in September.

German Physicians Asked to Resign.—It is reported that the following instructors have been asked to resign from the Medizinische Akademie in Düsseldorf: Professor Boden, ordinarius and director of the medical polyclinic; Professor Ellinger, director of the pharmacologic institute; Professor Meyer, extraordinarius, and Privat-dozent Dr. Neustadt. The University of Greifswald (Germany), one of the oldest in existence, has been rechristened the Ernst Moritz Arndt University.

International Goiter Conference.—The third International Conference on Goiter will be held in Bern, Switzerland, August 10-12. American physicians who will take part are Drs. Henry S. Plummer, Rochester, Minn., who will speak on "Pathogenesis of Basedow's Disease"; Richard B. Cattell, Boston, "Iodine Treatment of Basedow's Disease" and Albert G. Webster, Baltimore, who will discuss new studies on the etiology of endemic goiter. Drs. Edwin P. Sloan, Bloomington, Ill., and Charles H. Arnold, Lincoln, Neb., are official delegates of the American Medical Association to the conference.

Dixon Memorial Lecture.—Colleagues and friends of the late Prof. W. E. Dixon, leading British pharmacologist who died in 1931, have accumulated a fund of £695 which is to be used to found a lectureship in his memory, it was decided at a meeting at the Royal Society of Medicine, June 1. The lecture will be delivered biennially or triennially on some subject of pharmacologic or therapeutic interest under the trusteeship of the Royal Society of Medicine. Professor Dixon was for many years associated with Cambridge University, where he is said to have made the school of pharmacy famous both by his own research and that of his students. He was joint editor of the *Journal of Pharmacology and Experimental Therapeutics* and was the author of a textbook in pharmacology as well as of many articles.

Government Services

Memorial to Colonel Bruns

A portrait of the late Col. Earl H. Bruns, U. S. Army Medical Corps, will be placed in an army tuberculosis hospital as a memorial, according to a recent announcement. Colonel Bruns, who died early this year, was for many years one of the leaders in tuberculosis work in the army. It is expected that the portrait will hang in some room or building to be named in his honor. Subscriptions for the memorial should be mailed to the secretary of the Denver Sanatorium Association, Dr. Arnold Minning, Republic Building, Denver.

Funds of Public Health Service Reduced

Expenditures of the U. S. Public Health Service for the fiscal year which began July 1 will be reduced from \$10,380,328 originally appropriated by Congress to \$7,860,000 by order of the Bureau of the Budget. Essential activities of the service will be maintained, although some will be curtailed. Of 376 commissioned medical officers, twenty-one were placed on the retired list, three discharged and one resigned. Quarantine and immigration activities in foreign countries have been reduced with the discharge of ten American physicians stationed outside the United States. Those who remained suffered reductions in compensation, as did most of the 700 acting assistant surgeons on part time service within the country. The appropriation for twenty-six marine hospitals and about twenty field relief stations was reduced from \$5,600,000 to \$4,420,000, a reduction partly met by economies in operation. Financial aid to county health units in twenty-eight states will be discontinued. Some of the units will be maintained by the counties and states, but many will probably be abandoned. Funds of the division of scientific research were cut 50 per cent, a reduction that was taken up in operation economies. Payless furloughs of two days a month will meet a similar cut in the maritime quarantine division. The division of mental hygiene will delay for one month the opening of service in new institutions in Detroit, Springfield, Mo., and Oklahoma. Altogether thirteen employees were discontinued in the Washington office, 650 at field stations and 310 engaged in rural sanitation. Twenty-five were placed on indefinite furlough and 1,500 others will take five days off without pay each month.

U. S. Public Health Service

Acting Asst. Surg. John P. Mayer, relieved at Pittsburgh and assigned to duty at the Marine Hospital, Seattle.

Passed Asst. Surg. William H. Sebrell, Jr., directed to assume charge of the office of nutrition investigations under the direction of the chief of the division of scientific research.

Surg. Estella Ford Warner, directed to assume charge of the office of child hygiene investigations, under the direction of the chief of the division of scientific research.

Passed Asst. Surg. (R) Henry H. Duke, relieved at Norfolk, Va., and assigned to duty at the Marine Hospital, New York.

Asst. Surg. Charles W. Folsom, relieved at Washington, D. C., and assigned to duty at Atlanta, Ga.

Medical Intern Jay E. Houlihan, relieved at Stapleton, N. Y., and assigned to Marine Hospital, Buffalo.

Medical Intern Floyd A. Hawk, relieved at Chicago, and assigned to duty at the U. S. Penitentiary Annex, Fort Leavenworth, Kansas.

Medical Intern Charles S. Sample, relieved at New Orleans, and assigned at the U. S. Penitentiary Annex, Fort Leavenworth, Kansas.

Medical Intern Edgar W. Moreland, relieved at Chicago and assigned at the U. S. Industrial Reformatory, Chillicothe, Ohio.

Medical Director Gustave M. Corput, relieved at Montreal, Canada, and assigned at San Diego.

Sr. Surg. George Parcher, relieved at Stapleton and assigned to duty at Bangor, Maine.

Acting Asst. Surg. George Hess, relieved at Chillicothe, and assigned at the U. S. Penitentiary, Atlanta.

Medical Intern Robert E. Blount, relieved at New Orleans, and assigned at the Marine Hospital, Galveston, Texas.

Medical Director French Simpson, relieved at Naples, Italy, and assigned at Fort Monroe, Va., in charge of the quarantine station at that place.

Surg. Walter G. Nelson, relieved at New York, and assigned at Ellis Island, New York.

Surg. Carl Ramus, relieved at East Boston, Mass., and assigned at Marine Hospital, New York.

Dr. George L. Cristy, placed on inactive status as passed assistant surgeon in the reserve corps, effective August 31.

Passed Asst. Surg. Eddie M. Gordon, Jr., relieved at Winnipeg, Canada, and assigned at Quarantine Station, Angel Island, Calif.

Asst. Surg. Roscoe C. Kash, relieved at Angel Island and directed to proceed to Nashville, Tenn., to establish headquarters.

Medical Director Samuel B. Grubbs, relieved at Honolulu, T. H., and assigned at Ellis Island, N. Y.

Asst. Surg. Waldemar J. A. Wickman, relieved at Pittsburgh, and assigned at Marine Hospital, Boston.

Asst. Surg. W. W. W. relieved at Boston, and assigned at Marine Hospital, New York.

Ewing Taylor, placed on inactive status as surgeon in reserve corps.

Paul J. Leechy, placed on inactive status as assistant surgeon.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 1, 1933.

The British Pharmacopeia

At a meeting of the General Medical Council, Sir Henry Dale, chairman of the Pharmacopeia Committee, reported that the total number of copies of the new edition sold was just under 30,000. It was recommended that, to meet a difficulty among manufacturing chemists and pharmacists arising from the fact that the date of publication of the new issue was also the date on which alterations became operative, the Council should approach the government with view to the introduction of a bill into parliament to enable the council to fix a date subsequent to the date of publication when the Pharmacopeia should go into effect. The experience of the Pharmacopeia Committee during the past four years has shown the importance of continuous work between the issue of each pharmacopeia and its successor. It has therefore been decided that, when the new commission takes office, provision shall be made for collecting scientific and technical literature, preparing and publishing preliminary reports, the issue of addenda, and the investigation of pharmaceutical and medical problems. It is considered that in the preparation of the next pharmacopeia the most numerous and important changes in the group of substances requiring standardization by biologic methods will be concerned with the serums and bacteriologic remedies. Dr. Percival Hartley has been appointed on the commission because of his direct knowledge of these.

The British Medical Association and Compulsory Vaccination

The council of the British Medical Association has made a recommendation with regard to vaccination which is a new departure in the profession's attitude. Medical opinion has always been in favor of compulsory vaccination. In 1923 the representative meeting of the association restated the official policy and practically universal conviction of the medical profession that vaccination in early infancy, repeated after such intervals as may be deemed necessary, is the only preventive of smallpox. Owing to the enormous number of unvaccinated persons, it recognized the danger of a pandemic and urged the government to take the necessary measures to avert this peril. In 1905 the percentage of vaccinations to births was 75.8. The percentage has continually diminished, until it was only 42.6 in 1928. The English have always been great individualists and resented interference with the liberty of the individual, in his religion or mode of life, more than any other people in the world. This they have carried to such an extent as to exempt the children of "conscientious objectors" from vaccination, although the consensus of expert opinion was that this was dangerous to the community. In the last report of the council of the British Medical Association there is mentioned the opinion, expressed in some quarters, that the diminution of vaccination is partly due to the compulsory nature of the present system (a declaration of conscientious objection is necessary for exemption) and that this might be replaced by a more satisfactory condition if vaccination were only voluntary. It is also pointed out that the mild type of smallpox that has prevailed in recent years has lessened the inducement to obtain the protection of vaccination. It has also been shown that vaccination is not entirely free from the subsequent danger of encephalitis. Careful consideration of these facts and of the suggestion that voluntary vaccination, encouraged by the propaganda of the local authorities, might achieve a higher proportion of vaccination than compulsory vaccination now obtains, had led the council to submit the following resolution: "That the

British Medical Association, while reaffirming its belief in the efficacy of vaccination in conferring immunity against smallpox, is of opinion that the time has arrived when the question whether greater protection against smallpox would be afforded by voluntary rather than by compulsory vaccination should be considered." This change of attitude has attracted considerable notice in the press.

Sir Walter Fletcher: An Organizer of Medical Research

Sir Walter Fletcher, F.R.S., secretary of the Medical Research Council, has died at the age of 59, after an operation. Born at Liverpool, he was educated at Trinity College, Cambridge, and graduated in 1894 with honors in the natural science tripos, taking physiology as one of his subjects. He became a demonstrator in the physiologic laboratories of the university. He made important researches into the chemistry of muscular contraction—oxygen supply, osmotic properties of muscle, significance of the lactic acid, and the association of heat rigor with intramolecular oxygen. From 1904 to 1914 he was tutor at Trinity. In 1914 he was appointed secretary of the Medical Research Committee, a new body formed to promote medical research and financed by funds provided by the national insurance act. The outbreak of the Great War diverted its activities to medical problems, which then arose. After the war the committee was reconstituted as the Medical Research Council. The numerous and important researches directed by the council are known all over the world. Dietetics and the deficiency diseases are some of the subjects in which knowledge has been materially advanced. In the direction of these researches, Fletcher, as permanent secretary of a constantly changing Council, played the most important part. He became known wherever medical research is in progress as a great organizer. In 1928 he went to India as chairman of the Committee on the Organization of Medical Research under the Government of India.

A New Portable X-Ray Unit

A demonstration has been given of a new mobile x-ray unit that has been added to the equipment of the ambulance service of the British Red Cross Society. Radiologic examination of a patient too ill to be moved from his home has presented serious difficulties. In recent years "portable" apparatus has been available, but with definite limitations. It is claimed for the new unit, which is at the disposal of physicians for reasonable charges, that it is capable of producing as good a result as can be obtained in a fully equipped hospital department. The outfit is housed in a neat automobile. Generator, switch boards and controls are in front of the car, and the interior is fitted with specially constructed developing tanks. The equipment includes broad and fine focus tubes, Potter-Bucky diaphragm, a folding couch and a universal tube stand. A special feature is an ingenious system of electrical regulation, which overcomes the distortion unavoidable when using a small portable apparatus connected to the ordinary house current. It is possible to obtain fully exposed roentgenograms of the chest in one-fortieth second or of the stomach in one second. Arrangements have been made for the submission of the films taken by the service, with the physician's history of the case, to a member of the British Institute of Radiology or to a radiologist selected by the physician, whose considered opinion is sent with the roentgenogram to the physician.

The Hardships of Physicians in Distressed Areas

In some industrial areas in England, as much as 80 per cent of the population is out of work and is likely to continue so for some time. In some of these areas the majority of the workers have been in the habit of arranging for medical attendance for their wives and families under some contract system. Medical attendance for the workers themselves is provided by

the national health insurance system. A correspondent of the *British Medical Journal* points out that when in steady employment these workers are good payers and receive medical attention for a contract payment of about 12 cents per week, generally deducted from the weekly pay by arrangement with the employer. Generations of workers have never known the need to pay a physician's bill. Now that the men are unemployed, the physicians in the distressed areas find it almost impossible to collect their levies. If they refuse to continue attendance, there is the risk that relatives and friends of the patients who come under the insurance system will go to more "sympathetic" physicians. The position of the physicians is serious and may become more serious, for the unemployed may run out of insurance benefit in time and this mainstay also may give way.

A Criticism of the Health Insurance System

At the Sanitary Congress, Dr. G. H. Pearce, health officer of Batley, Yorkshire, delivered his presidential address, in which he criticized the national insurance system. He said: "A large proportion of the medicine dispensed today under this system is both useless and unnecessary and an entire waste of money. Unfortunately, the patient does not believe this and insists on having his bottle. The general practitioner who tells the majority of his patients that they do not need medicine will soon require much smaller consulting rooms." It will be noticed that this condemnation extends beyond the insurance system to medical practice in general. The English working class has, in the words of the late Sir Frederick Treves, "a craving for bottles of medicine which is second only to the craving for strong drink." However, in the case of insurance practice the evil is intensified, for the craving can be indulged in without any additional payment, while in private practice it costs something.

PARIS

(From Our Regular Correspondent)

June 7, 1933.

The French Assembly of General Medicine

The *Assemblée française de médecine générale* brings together the modest practitioners of the rural districts and the masters of science in the large cities. The recent sixth session of the assembly devoted itself to the prevention of tetanus. The question has a wide interest at present. A court had imposed a severe penalty on a physician, after the death of a patient from tetanus, because he had not given an injection of antitetanus serum immediately after the injury. The whole medical profession protested against the decision, for it appeared to indicate that every injury, no matter how trivial, should be followed by an injection of serum. The evidence collected by the practitioners in the provinces revealed that there are regions of France free from tetanus—the large cities, for example, and the mining regions. There are regions that have a bad reputation for tetanus, these being universally known to local physicians. Tetanus in general has been less frequent since the war, a fact probably due to the increasing substitution of motor vehicles for horses. In the industries it is rare. In the rubber industry, for example, in 33,612 injuries (340 more or less serious) in which 710 injections were given there was not a single case of tetanus. In the mines, in 75,000 injuries only one case of tetanus developed. The very minor injuries, many of them unobserved, which receive no treatment, appear to expose the subject much more to tetanus than do the more important injuries, which require extensive dressings. It appears certain that there are subjects who have a natural immunity. But such immunity is lost in course of time. A discussion arose concerning the value of preventive serotherapy. The efficacy of such treatment was unanimously accepted. The new antitetanus anatoxin of Ramon has a potency ten times that of the serum heretofore used. Three injections at intervals of three weeks appear to confer

an immunity, and research on guinea-pigs appears to indicate that it lasts four or five years. The assembly took up also serum accidents, which seem to have become more frequent than before the war, especially the cases of persistent paralysis. It appears that an increased sensitiveness to the serum is gradually developing among the people, as is the case with respect to diphtheria. M. Bourguignon, who has had a long experience in the Hôpital de la Salpêtrière, said that the localization of the paralysis in the various muscles is determined by their weakest chronaxia. He cited the case of a family all the members of which, after an injection of antitetanus or antidiphtheria serum, developed paralysis affecting the same groups of muscles in all cases. One of the members, a physician, had given himself an injection of serum for a suspected sore throat, which was found afterward to be nondiphtheritic. The paralysis was due therefore solely to the serum. Mr. Alajouanine presented a paper on postserum paralysis. Some facts remain obscure; for example, the predilection for the right side, whereas the chronaxia is weaker on the left side. The note taken with regard to injections of antitetanus serum after injuries led to the following conclusions, which the assembly unanimously adopted: No absolute rule can be formulated. The practitioner remains the sole arbiter of his conduct in each case, and no court may hold him responsible if a case of tetanus develops, provided the physician, utilizing his experience and his knowledge, acted according to his conscience. It is evident that serum should be injected, in all cases of suspected wounds, in a milieu known to be infected. But, in view of the fact that untoward manifestations caused by the serum may be serious, it would be unjust to make every person who has an insignificant injury, not contaminated by soil or dust, and in a milieu in which tetanus is unknown, incur the risks of an injection of serum. The injured person may, furthermore, refuse to accept an injection. In that case, it is best for the physician to ask the patient to give him a written refusal, in order to protect himself before the courts in case of untoward developments.

The Congress of Legal Medicine

The annual French Congress of Legal Medicine was held, at the Institut médico-legal de Paris, May 24, under the chairmanship of Professor Balthazard. Professor Chavigny of Strasbourg spoke on the use of microbic cultures by belligerents in time of war, a use that the League of Nations has formally disapproved, although admitting that there is no means of preventing such use. Mr. Mazel of Lyons, who discussed posttraumatic delirium tremens, brought out that an attack of delirium tremens, possibly fatal, was not necessarily, when it followed a traumatism, the result of the latter. The legal responsibility for a traumatism was often difficult to prove before a court, the traumatism having usually but little importance. Mr. Etienne Martin of Lyons, taking up the discussion, observed that often at necropsy, after such accidents, one discovers an unexpected pneumonia, which is the true cause of death and which is entirely independent of the traumatism. A discussion arose between Messieurs Balthazard, Charpentier and Genil-Perrin as to whether delirium tremens constitutes a morbid entity of toxic origin. Professor Claude discussed "Psychopaths at Liberty," a subject which includes the delicate question of the proper adjustment between the rights of the harmless psychopath and the need of protecting society against the possible harmful acts of psychopaths. Professor Claude's thesis may be epitomized thus: dissemination among the public of the idea that many psychopathies are curable by appropriate treatment; increase in the number of centers for the detection and prevention of mental diseases, open to all comers at the hospitals; reservation of the hospitals of internment for subjects who are dangerous or incurable; organization of domiciliary treatment for other psychopaths, by a special personnel furnished by the hospital; compulsory notification of all subjects who are dangerous, who should be required

to appear before an examining board comprising a magistrate and a psychiatrist. The board should reach an immediate decision in regard to their disposition. Mr. Toulouse proposed the creation of centers of prophylaxis in the large cities, patterned after that in the Hôpital Henri-Rousselle in Paris, of which he is the director. Mr. Wervaerck described the new Belgian organization, which provides for the treatment of harmless psychopaths at liberty. During the past three years, the medico-judicial commissions have authorized the dismissal from the asylums of 252 patients out of 600 and have observed only five recurrences necessitating reinternment.

The Sanatorium for Students

The sanatorium established by the Union nationale des étudiants has been opened. The institution was begun eight years ago but its completion was retarded by financial difficulties. With an appropriation granted by the minister of public health, the sanatorium was finally completed. It is located in the mountains at Saint-Hilaire-du-Touvet, in the Dauphiné, on the plateau des Petites-Roches. Two other private sanatoriums, that of the Union métallurgique et minière and that of the department of the Rhone, are located in the vicinity. The new sanatorium consists of two buildings, one for women students and one for men students. The total number of beds is 150. The organizers believe that the patients, although for the time being taken away from their studies, should remain in contact with the university and intellectual life.

BERLIN

(From Our Regular Correspondent)

June 12, 1933.

Eugenics in Germany

In the newly established Reichsministerium für Volksaufklärung und Propaganda, a discussion developed in regard to the essentials for the future journalistic treatment of medical problems. Ministerialrat Conti, M.D., of the medical department of the Prussian ministry of the interior, brought out that one of the first duties of practical eugenics is to support the family idea in every conceivable manner. All scornful remarks, and jokes about the men who are heads of large families of children, should be omitted. Every opportunity should be taken to call attention to the fact that nearly every man who has become prominent in public life sprang from a large family. He emphasized further that the fear of Germany becoming overpopulated is unfounded. Commercialized abortion must be sternly suppressed.

The constantly declining birth rate, the impairment of families with absolutely healthy antecedents, and the frequent mingling of races and degeneration of the German family demand the closest consideration of the federal government, that such development may be checked and the German population be thus preserved. To secure aid in the elaboration of these measures, the minister of the interior has abolished the "federal commission for the consideration of demographic problems" and has summoned an "expert council for social and eugenic problems."

The *Deutsche Korrespondenz für Gesundheitswesen und Sozialversicherung*, previously published by the medical syndicates, is to be discontinued. In its place, the newly established Aufklärungsamt für Bevölkerungspolitik und Rassenpflege is planning to publish *Korrespondenz für Volksaufklärung und Rassenpflege*, which will contain material on all questions pertaining to the theory of hereditary transmission and the promotion of racial welfare. Also *Das Hörrohr*, which was often found in the waiting rooms of physicians, is to be discontinued and will be replaced by "*Neues Volk*," organ of the bureau for the promotion of population and racial welfare.

At the request of the special commissar for the public health service in the Free State Saxony, a department of the science of heredity and promotion of population and racial welfare will be organized in the Akademie für ärztliche Fortbildung in

Dresden. Three or four day courses are being considered, which all physicians of Saxony will be required to attend.

In Dortmund, a bureau of racial hygiene for the benefit of the city administration has been organized under the direction of a physician. Its first task will be to complete, from the standpoint of race hygiene, the collection of statistical data on the 80,000 school children. In this connection, the representative of the Bavarian ministry of justice gave, at the Congress of the Criminobiologic Society in Hamburg, June 7-10, an outline of a program for the protection of the state against inferior types of humanity. He emphasized that every German should be examined as to his biologic worth and, on the basis of the results, should be assigned to a corresponding position. Those who, on the basis of their hereditary aptitudes, could claim no assignment should be eliminated. Also criminobiologic science should from now on place itself at the disposal of the people's cause, and its exponents should be collaborators in the great movement for the regeneration of the people. It is their sacred duty, in the future, to afford the state protection against being overwhelmed by inferior types.

It is also significant that one of the most important addresses at this year's session of the Kaiser-Wilhelm-Gesellschaft zur Förderung der Wissenschaften was devoted to prognosis as to hereditary characteristics. Professor Rüdin of the Deutsche Forschungsanstalt für Psychiatrie in Munich considered the question of hereditary prognosis, or the computation of the probabilities of the hereditary risk for children. Preservation of the healthy hereditary elements and eradication of the pathologic elements constitute the bases of all race hygiene. In contrast with the theory of hereditary transmission in plants and animals, human hereditary biology must renounce experimentation and is thus entirely dependent on pure experience. The probabilities of a hereditary risk in a given case are computed with the aid of a large mass of statistical material. Persons with hereditary disorders must be detected, and in their progeny the percentages of the same or similar disorders must be determined and compared with the percentages found, on the average, in the general population. In the case of manic-depressive insanity, approximately 33 per cent of the children inherit the disease; in schizophrenia and epilepsy, the percentage is only 10. The percentage is much higher than is found in children, on the average. The hereditary menace is, of course, greatly increased if both parents are affected. Attention must not be confined to the parents but must be extended to the relatives, or the family group; for, even though the parents are healthy, if the relatives are affected it is quite possible that the pathologic inheritance will crop forth in spite of the fact that the parents are healthy. And, in addition to those with frank symptoms of the disease, a large portion of the descendants present all sorts of mental defects, for which group the collective term "psychopaths" is employed. The ideal sought is the allocation of every person, whether presenting healthy or pathologic hereditary antecedents, to a characteristic hereditary type. Through detection of the empirical hereditary prognosis, precise hereditary figures should then be established for each person's progeny. In this manner it would not only be possible to eliminate the elements with undesirable hereditary traits but it would likewise be possible to make known the individuals with sound hereditary qualities, whose lives and progeny could be protected in an adequate way; for the positive, constructive features of race hygiene are just as important as the negative, eliminating features.

Reorganization of the Medical Profession

As a preliminary to the future reconstruction of the medical profession in Germany, Dr. G. Wagner of Munich, the commissar of the medical syndicates, has adopted measures looking toward the amalgamation of the *Deutscher Aerztevereinsbund* and the *Hartmannbund*. The future amalgamation will hold

its sessions in Berlin, instead of in Potsdam or Leipzig. In keeping with these measures, the *Deutsches Aerzteblatt*, organ of the *Deutscher Aerztevereinsbund*, and the *Aerztliche Mitteilungen*, organ of the *Hartmannbund*, will be merged, as of July 1, under the title *Deutsches Aerzteblatt*. In view of the historical development of the two societies, it is only natural for each to have its own independent organ; but a number of physicians of keen insight cherish the opinion that an amalgamation of the two journals is not only feasible but desirable.

No Restrictions on the Number of Medical Students

In a previous letter (*THE JOURNAL*, Dec. 31, 1932, p. 2276), it was stated that there was widespread sentiment in favor of restricting the number of students and that measures looking in that direction might be given a trial. Likewise spokesmen of the medical profession had demanded the introduction of certain restrictions (*THE JOURNAL*, Oct. 8, 1932, p. 1276). The Prussian minister of public instruction has replied to the *Aerztevereinsbund* that, for the present, no attempt will be made for the establishment of uniform principles controlling the number of students or looking toward a selection of candidates for the summer semester of 1933. Further observations must be made before any action can be taken. Moreover, the German *länder* recently reached a general agreement in regard to the restriction of the number of graduates of secondary schools to be recommended for admission to higher schools of learning, aside from the recent further restrictions for racial reasons.

Professor Langstein's Death

The sudden death of Prof. Leo Langstein of Berlin, on June 7, at the age of 57, is announced. Born in Vienna, he studied medicine in Austria and later in Germany, and was for years assistant of Heubner at the *Universitäts-Kinderklinik* in Berlin. Langstein was one of the leaders in modern pediatrics. When funds were secured for erecting a research institute for the study of the physiology and the pathology of the infant, he occupied a prominent position in that institution. He became director of the Empress Auguste Viktoria House for combating mortality in children, located in Berlin. Under his direction this institution became a model establishment. With his talent for organization, he succeeded, even in difficult times, in securing the funds that enabled him to carry on. Thousands of women have learned, in the courses that Langstein organized, to care for their children. At the same time, he developed marked activity as a scientific investigator and as a teacher. He was one of the editors of the *Ergebnisse der inneren Medizin und Kinderheilkunde*.

ITALY

(From Our Regular Correspondent)

May 15, 1933.

Congress of Ophthalmology

At the fourteenth International Congress of Ophthalmology, held in Madrid, the Italian delegation was headed by Professor Ovio, director of the *Clinica oculistica* of the University of Rome. Professor Ovio presented an official paper on "Non-operative Treatment of Detachment of the Retina." Professors Bietti, Caramazza, Speciale and other Italian ophthalmologists presented communications on the same subject or participated in the general discussion.

Professor Di Marzio of the University of Bologna read a paper on the differences between the results of the Gonin operation and the results of diathermocoagulation. Professor Strampelli described results that he secured with subretinal injections of blood plasma in detachment of the retina.

Professor Ruata reported his research on the etiology of trachoma and on the use of a vaccine, which he has used with success for more than one year.

A New Society

The faculty of medicine of the University of Catania established recently the Società Medico Chirurgica di Catania, and Professor Foderà, dean of the faculty of medicine, was chosen president. At the first session, Professor Di Guglielmo discussed the treatment of undulant fever; Professor Sorge discussed undulant fever due to *Brucella paramelitensis*.

Academy of Sciences of Apulia

At a recent meeting of the Accademia pugliese de scienze in Bari, Spadafina spoke on the evolution of fibroblasts. His research led him to conclude that the fibroblasts in tissue cultures may, under certain stimuli, be transformed into macrophages.

Trinchera exhibited a large cyst of the right femur, complicated by a complete fracture of the neck of the femur. Recovery was effected in about four months by the application of a simple traction apparatus to the limb in abduction and internal rotation.

Sannicandro's research on polypeptidemia in pregnancy indicates that there is a constant increase of polypeptides during the first months of pregnancy but more marked during the later months. The polypeptidemia is independent of azotemia and is probably due to an abnormal production of polypeptides in the region of the placenta.

Scholarships for Foreign Physicians

The committee in charge of scholarships for foreign physicians attending the Istituto Mussolini in Rome has examined the papers of competitors from forty-two countries, and has selected a physician for each of the following countries: Austria, Belgium, England, Finland, Germany and Rumania. Each scholarship amounts to 6,000 lire (\$375), which includes maintenance for six months. The funds are supplied by the general management of the public health service and by the Cassa nazionale per le assicurazioni sociali.

Center for Cancer Diagnosis

In the civilian hospitals of Genoa, a center for the diagnosis and treatment of cancer has been established at the request of the minister of the interior. The center has a consulting service, in which physicians examine difficult cases to decide the nature of the study to be made in each case and to provide, if necessary, for admission of the patients to various hospitals.

Case of Chronic Obstruction of the Ileum

Dr. Pignatti of Brescia reported before the medicosurgical society a case of obstruction of the cecum, with dilatation of the distal loop of the ileum. Ten years previously the patient had suffered from peritonitis. For two years she had attacks of intestinal disturbance, which became more intense just preceding the surgical operation. There was a tumefaction on the right side. Radiologic examination revealed innumerable discoid shadows, which corresponded to the site of the tumor. It was assumed that the manifestations were caused by fruit seeds collected in a dilated loop of intestine and at the operation the distal loop of the ileum was found filled with watermelon and grape seeds, pressed together to form a large mass. The patient recovered.

The Medical Curriculum

Professor Giordano of Venice, speaking on the medical curriculum before the senate, stressed the danger present in some universities that the subject of anatomy be reduced to a mere routine. In his opinion the interval between graduation and the taking of the government examination is too short. Giordano holds that at least six months or a year of medical practice should be completed by the graduate before he is admitted to the government examination. This might be accomplished

by reducing to five years the university instruction (which now extends over six years) and by omitting certain specialties, which could be taken up in postgraduate courses. General medical culture, he said, is today much neglected.

Distribution of Gas Masks

Regulations have been enacted controlling the distribution of gas masks. In certain places, which will be determined, all the civil and military personnel that, in case of war, must carry on will be provided with masks, which will vary in type, depending on whether they are to be used by personnel that must not cease working during the progress of an air attack or by persons who can stop their work (the passive civil population) and seek protection in shelters. The masks needed for the various departments of the government will be supplied by the respective ministries, under the supervision of the ministry of war. The masks needed for the corporations associated with the government, for the provinces, for the communes and for private parties, may be secured by purchase directly from the authorized firms. The production of these types of masks is under the control of the central government.

Laboratory for Study of Physiology of Mountain Regions

In the Alpine school of the Guardia di finanza, a laboratory has been established for the study of physiologic problems pertaining to athletics. This laboratory, at Predazzo, more than 1,000 meters above the sea level, is equipped with modern apparatus for an examination of the respiratory organs and the cardiocirculatory system. The data collected will lead ultimately to the establishment of criteria for the selection of the type of constitution best adapted for mountain service.

BUDAPEST

(From Our Regular Correspondent)

May 31, 1933.

The Medical Meeting at Balatonfüred

A medical congress was held, May 9-16, at the picturesque bathing resort Balatonfüred on Lake Balaton. The congress was attended by an unusually large number of physicians; in fact, it belied the misery in the profession which, unfortunately, is extant. On the other hand, the large attendance is proof that physicians can spare a week to go to the congress, as they lose little by being absent from their practice. Joseph Simeglio, councilor of health, read a paper on "The Practitioner and Balneology." Practitioners are recommending less and less the use of natural waters, in spite of the fact that in the treatment of chronic diseases they are indispensable. The ways by which baths affect disease vary and it is necessary that physicians know about them. Balneology is not a compulsory study at the universities, but it should be regarded as a part of pharmacology and at the examinations at least one question on balneology should be given to every candidate. He explained that the baths act on the sensory nerve endings, and the stimuli originating there are conducted elsewhere. The effect depends on the temperature and chemical composition of the baths, and other circumstances.

Dr. Elemér Scipiadès read a paper on gynecologic hemorrhages, in which he outlined the principles of treatment. If there is an anatomic cause present, this has to be treated, usually by surgical methods. If no such cause is present, a search should be made for inflammation, in which cases the treatment can be medical only. If this can be excluded, then general treatment should be resorted to. In the treatment of some kinds of gynecologic hemorrhages an important rôle should be accorded to dietetic and balneologic treatment.

Dr. Istók Bertalan spoke of physical methods in the treatment of heart disease. He said that although during the last ten years more attention had been paid to physical medicine,

comparatively little had been given to its application to heart disease. He is of the opinion that much more should be done by physical means for heart disease. Drugs have a limited value in these disorders. Rest, regulated exercise, changes of environment, and, as far as possible, freedom from anxiety and mental worry are important. With certain kinds of baths the main effect is capillary dilatation and an increased blood flow, with a desirable readjustment of blood pressure. The reflex result of this on the heart, as shown by F. G. Thomson, is to slow the beat and increase its propulsive force. Following a short bath at 39 or 40 C. there was an immediate rise in the systolic pressure, but, almost always, a drop in the diastolic pressure. Even in the normal person a hot bath produces profound changes in the heart action. Carbon dioxide baths definitely affect the basal metabolism, cause an increased flow of blood through the peripheral vessels and so relieve the heart.

The number of physical defects is alarming in Hungary. At the last meeting of the Statistical Society, Dr. Michael Horvath, lecturer on orthopedics at the University of Budapest, made public some figures. He knows that the statistics are incomplete. His investigations prove that more than half of the defectives, and particularly those of the well-to-do classes, deny their physical defects. The statistics do not include the war invalids and the industrial cases, yet the number of cripples amounts to more than 27,000. In proportion to the small population, nine and a half millions, this figure must be regarded as excessively high. Most of the conscripted cripples are under age, and in good part their deformations are due to deficient housing and nutrition, rickets, tuberculosis and caries. If to these figures are added the war invalids and the industrial cases, the sad conclusion must be made that in Hungary one person in sixty-eight is of unsound body.

The Death of Professor Ferenczi

The Hungarian scientific world sustained a great loss in the death of the psychoanalyst Alexander Ferenczi. Immediately after Professor Freud of Vienna proclaimed his doctrines on psychoanalysis, Ferenczi went to Vienna and became a zealous and ingenious pupil and follower of his master. Coming back to Budapest, Ferenczi tried to win Budapest physicians over to psychoanalysis. He succeeded in gaining many ardent adherents, so that shortly afterward he founded the Hungarian Psychoanalytic Society and became its president. This society had to fight against prejudice, not only at the outset but even after psychoanalysis became established. Years later Ferenczi was elected one of the chairmen of the Vienna Psychoanalytic Union, which post he filled with zeal. In spite of the distance from Budapest to Vienna, he scarcely missed a meeting. His untimely death in his fifty-ninth year is mourned by psychoanalysts throughout the world. At the cemetery, Prof. Paul Federn, vice president of the Vienna Psychoanalytic Union, and Anna Freud, daughter of Professor Freud, delivered eulogies. Both emphasized that Ferenczi was a man who not only dealt with the practical problems of healing but also had an absorbing scientific interest in his work.

Marriages

GLENN CLOVIS LORD, Indianapolis, to Miss Rose-Ann O'Brien of Terre Haute, Ind., June 12.

RUDOLPH F. NIELSEN to Miss Lillian Petersen, both of Cedar Falls, Iowa, June 21.

THOMAS M. BOULWARE to Miss Mary Irene Hall, both of Birmingham, Ala., May 30.

ARNOLD CASSELL, New York, to Miss Rose Rapport of Bayonne, N. J., June 28.

CHARLES ADAMS HOLDER, Paris, France, to Mrs. Dorothy Caruso Ingram, July 5.

Deaths

William Blair Stewart ☉ Atlantic City, N. J.; Medico-Chirurgical College of Philadelphia, 1890; fourth vice president of the American Medical Association in 1907-1908 and a member of the House of Delegates, 1927-1930; fellow and governor of the American College of Physicians; past president of the Atlantic County Medical Society; assistant professor of materia medica and physiologic action of drugs at his alma mater, 1893-1898; member of the Atlantic City advisory board number 1 during the World War; at one time member of the board of education; formerly chief of the medical staff of the Atlantic City Hospital; aged 66; died, July 11, of heart disease.

Theodore Eugene Oertel ☉ Augusta, Ga.; Columbian University Medical Department, Washington, D. C., 1892; professor of clinical otology and otolaryngology, University of Georgia Medical Department; member of the American Academy of Otolaryngology and the Laryngology and the American Laryngological and Otological Society; served during the World War; fellow of the American College of Surgeons; on the staffs of the University Hospital, Wilkesford Hospital for Women and Children and the U. S. Veterans' Hospital, number 62; author of "Medical Microscopy"; aged 69; died, June 27.

Ira Carleton Chase ☉ Fort Worth, Texas; University and Bellevue Hospital Medical College, New York, 1899; member of the House of Delegates of the American Medical Association, 1910, 1918 and 1919, and member of the Judicial Council, 1919-1925; past president and secretary of the State Medical Association of Texas; fellow of the American College of Surgeons; on the staffs of St. Joseph's Infirmary and the Methodist Hospital; for eight years editor of the *Texas State Journal of Medicine*; aged 64; died, June 20, of carcinoma.

James Julius Richardson ☉ Atlantic City, N. J.; University of Maryland School of Medicine, Baltimore, 1889; formerly clinical professor of otolaryngology, Howard University College of Medicine; fellow of the American College of Surgeons; at one time on the staffs of the Providence and Freedmen's hospitals, Washington, D. C.; aged 65; died, June 28, of heart disease.

Weller Van Hook, Coopersville, Mich.; College of Physicians and Surgeons of Chicago, 1885; member of the Illinois State Medical Society; professor of surgery, Northwestern University Medical School, Chicago, 1896-1908; at one time on the staff of the Wesley Memorial Hospital, Chicago; aged 71; died, July 1, of cerebral hemorrhage.

Edward H. Kessler ☉ St. Louis; St. Louis Medical College, 1887; member of the American Roentgen Ray Society and the Radiological Society of North America; senior instructor in radiology, St. Louis University School of Medicine; on the staff of the Mount St. Rose Sanatorium; aged 68; died, June 10, of heart disease.

Frederick Treon ☉ Aurora, Ind.; Medical College of Ohio, Cincinnati, 1879; member and past president of the South Dakota State Medical Association; fellow of the American College of Surgeons; formerly on the staff of the Chamberlain (S. D.) Hospital and Sanitarium; aged 77; died, June 20, of arteriosclerosis.

Raymond David Kahle, Lima, Ohio; University of the City of New York Medical Department, 1884; past president and at one time member of the state board of health; formerly on the staffs of the City Hospital and St. Rita's Hospital; aged 73; died, June 16, of coronary thrombosis and arteriosclerosis.

Alfred Trenchard-Wood, Central Islip, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; member of the American Psychiatric Association; on the staff of the Central Islip State Hospital; aged 59; died suddenly, June 25, of cerebral hemorrhage.

Lipman Miller Kahn ☉ New York; Memphis (Tenn.) Hospital Medical College, 1900; fellow of the American College of Surgeons; served during the World War; on the staffs of the Beth David and Lebanon hospitals; aged 53; died, June 25, of bacterial endocarditis.

Aldrich Robert Burton ☉ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1917; served during the World War; on the staff of the Mercy Hospital; aged 40; died, June 27, in London, England, of septicemia, following peritonsillar abscess.

George Darwin Jennings, Covina, Calif.; Northwestern University Medical School, Chicago, 1899; member of the California Medical Association; veteran of the Spanish-American

War; aged 60; died, June 6, of hypertension, chronic myocarditis and arteriosclerosis.

Harry Bugge Moe @ Deerfield, Wis.; Rush Medical College, Chicago, 1915; member of the Illinois State Medical Society; past president of the La Fayette County Medical Society; aged 44; died, June 16, in a hospital at Madison, of heart disease.

George Henry Bentz, Kearney, Neb.; Kansas City (Mo.) Medical College, 1902; member of the Nebraska State Medical Association; served during the World War; aged 62; died, June 3, as the result of injuries received in an automobile accident.

Anna Mary Dice, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1925; member of the Ohio State Medical Association; aged 50; died, June 28, in the University Hospital, of fibroid tumor of the uterus and endometritis.

Henry L. Irish, Turner, Maine; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1875; member of the Maine Medical Association; aged 80; died, April 29, of malignant tumor of the prostate and sacrum.

Oliver S. Kash, Carlisle, Ky.; Kentucky School of Medicine, Louisville, 1882; member of the Kentucky State Medical Association; formerly county health officer; aged 77; died, June 24, of carcinoma of the throat.

Robert G. Hulbert, San Diego, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; member of the California Medical Association; aged 81; died, June 1, of hypostatic pneumonia and arteriosclerosis.

Peter John Dervin, Boston; Albany (N. Y.) Medical College, 1892; member of the Massachusetts Medical Society; aged 62; died, June 9, of myocarditis, arteriosclerosis and carcinoma of the rectum.

Francis Xavier Derooin, Chicopee, Mass.; Harvard University Medical School, Boston, 1883; formerly member of the board of health and school committee; aged 78; died, June 11, of cerebral thrombosis.

William Benjamin Pickrell, Los Angeles; Dunham Medical College, Chicago, 1898; University of Illinois College of Medicine, Chicago, 1906; aged 60; died suddenly, June 10, of coronary thrombosis.

Frank W. Dimmitt, Sherman, Texas; Rush Medical College, Chicago, 1881; member of the State Medical Association of Texas; aged 73; died, April 9, of chronic myocarditis and mitral regurgitation.

Vernon Roberts, Dayton, Ohio; State University of Iowa College of Medicine, Iowa City, 1907; on the staff of the Veterans' Administration Home; aged 48; was shot and killed, June 29.

William F. Justice, Lancaster, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 79; died, June 26, in the Graham Protestant Hospital, Keokuk, Iowa, of myocarditis.

Otis W. McQuown @ Marion, Ind.; University of Indianapolis Medical Department, 1900; county health officer; served during the World War; aged 56; died, June 23, of heart disease.

Jay Melancthon Kilborne, Sioux City, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1894; served during the World War; aged 60; died, May 25.

George M. Spencer, Grattan, Mich. (licensed, Michigan, 1900); aged 88; died, June 12, at the home of his son in Belding, of cerebral hemorrhage and arteriosclerosis.

Francis C. Herr, Ottawa, Kan.; Jefferson Medical College of Philadelphia, 1879; member of the Kansas Medical Society; aged 80; died, June 8, of carcinoma of the rectum.

Andrew Daniel Nelson @ Richland Springs, Texas; University of Texas School of Medicine, Galveston, 1898; aged 68; died, May 16, in a hospital at Temple.

J. William Davis @ Livingston Manor, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1902; aged 56; died, June 24, of heart disease.

Theodore Allen Prouse, Greenfield, Mo.; University of Kansas School of Medicine, Kansas City, Kan., 1906; aged 59; died, May 27, of acute dilatation of the heart.

Hermann P. A. Carstens @ Forest Park, Ill.; Bennett Medical College, Chicago, 1912; aged 61; died, June 11, of coronary thrombosis and chronic myocarditis.

George E. Eye, Long Beach, Calif.; Ensworth Medical College, St. Joseph, Mo., 1895; aged 66; died, May 26, of coronary thrombosis and arteriosclerosis.

Edward Dennis Cartwright, McPherson, Kan.; Washington University School of Medicine, St. Louis, 1931; aged 26; was accidentally drowned, June 4.

Horace M. Champney, Belle Fourche, S. D.; Long Island College Hospital, Brooklyn, 1885; formerly county coroner; aged 75; died, June 15, of senility.

Joseph Allison Jarrell, Jackson, Ga.; Bellevue Hospital Medical College, New York, 1885; aged 74; died, June 8, of carcinoma of the stomach.

Roscoe Chase Baker, Billerica, Mass.; Denver and Gross College of Medicine, 1907; aged 55; died, June 27, of gastric ulcers and peritonitis.

Hobart Jay Holcomb, Deland, Fla.; Bellevue Hospital Medical College, New York, 1882; aged 73; died, June 25, of cerebral hemorrhage.

Alexander Ben Fairfield, Beamsville, Ont., Canada; University of Toronto Faculty of Medicine, 1926; aged 32; died suddenly, May 12.

Thomas A. Bickerstaph, Lagrange, Ohio; Hahnemann Medical College and Hospital, Chicago, 1895; aged 74; died, May 1, in Elyria.

Joseph Brantley Harvey, Hampton, S. C.; Medical College of the State of South Carolina, Charleston, 1888; aged 66; died in May.

Clarence D. Romans, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1884; aged 79; died, June 12, of carcinoma of the rectum.

Albert John Kreitzer, Longmont, Colo.; Rush Medical College, Chicago, 1896; aged 75; died, June 19, of uremia and pyelonephritis.

John Bennett, Ava, Ill.; Missouri Medical College, St. Louis, 1898; aged 63; died, June 19, of heart disease and diabetes mellitus.

George O. Dibblee, Moores Mills, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1880; aged 77; died recently.

Noah Monroe Dukes @ Strawberry Plains, Tenn.; University of Louisville (Ky.) School of Medicine, 1890; aged 71; died, June 6.

Calvin Griffith McCullough, Chicago; Starling Medical College, Columbus, Ohio, 1883; aged 71; died, July 4, of cerebral hemorrhage.

Abraham L. Johnson, Prophetstown, Ill.; Rush Medical College, Chicago, 1891; aged 68; died, June 16, of coronary thrombosis.

George Edwards Abbott, Lakeside, Calif.; Harvard University Medical School, Boston, 1872; aged 84; died, May 28, of senility.

George P. Oldham, Raywick, Ky.; University of Louisville School of Medicine, 1882; aged 75; died, June 3, in Louisville, of uremia.

Forrest Lee Cosby, Columbus, Ga.; Atlanta Medical College, 1894; aged 68; died, June 11, in the Columbus City Hospital.

James Battle Farrington, Los Angeles; University of Texas School of Medicine, Galveston, 1899; aged 65; died, May 24.

Iman Wisse, Grand Rapids, Mich.; College of Physicians and Surgeons of Chicago, 1886; also a minister; aged 79; died, May 24.

Frank Romayne Wright @ West Allis, Wis.; Rush Medical College, Chicago, 1885; aged 70; died, June 22, of heart disease.

Arthur B. Sturm, Oak Park, Ill.; Rush Medical College, Chicago, 1899; aged 58; died, June 16, of cerebral hemorrhage.

Silas Elbert Morse, Dixon, Calif.; University of Kansas City (Mo.) Medical Department, 1882; aged 79; died, May 12.

Haig A. Sims, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1904; aged 50; died, May 13.

Fletcher D. Norton, Columbus, Ind.; Indiana Medical College, Indianapolis, 1877; aged 80; died, June 26, of paralysis.

Lucien Marsolais, Montreal, Que., Canada; University of Montreal Faculty of Medicine, 1921; aged 36; died, May 11.

Ernest Peltier, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1896; aged 63; died, March 15.

John Gilbert McMillan, Decaturville, Tenn.; University of Nashville Medical Department, 1900; aged 72; died, May 8.

David S. Fisher, Reading, Kan.; College of Physicians and Surgeons, Baltimore, 1884; aged 75; died, May 15.

John C. Aikman, New York; Detroit College of Medicine, 1891; aged 64; died suddenly, June 16.

James W. Smith, Cutler, Ill.; Missouri Medical College, St. Louis, 1881; aged 79; died, June 4.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

Herb-O-Life.—Western Wonder Remedy Co., Cincinnati. Composition: Epsom salt, citric acid, plant drug extract and water. Cure-all. Fraudulent therapeutic claims.—[N. J. 18529; March, 1932.]

Livingston's Dyspepsine.—Livingston Medicine Co., Griffin, Ga. Composition: Chalk, magnesium carbonate, baking soda, starch, extracts of plant drugs and a small quantity of a phosphate. For dyspepsia, etc. Fraudulent therapeutic claims.—[N. J. 18530; March, 1932.]

Vincol Herb Tablets.—Vincio Herb Co., Dayton, Ohio. Composition: Extracts of red pepper, golden seal and a laxative drug. For stomach, liver, etc. Fraudulent therapeutic claims.—[N. J. 18531; March, 1932.]

Neu-Carb.—Gilsen-Howell Co., Jersey City, N. J. Composition: Chalk (42 per cent), magnesium carbonate (15 per cent), starch, talc and a bland oil flavored with peppermint. For digestive troubles, etc. Fraudulent therapeutic claims.—[N. J. 18534; March, 1932.]

Dipsol.—Bessell Chemical Co., Hackensack, N. J. Composition: Potassium chlorate (2 per cent), citric acid (2.6 per cent) and water (95.4 per cent). For sore throat, coughs, tonsillitis, etc. Fraudulent therapeutic claims.—[N. J. 18540; March, 1932.]

Leo's Pills for Kidneys.—Brewer and Co., Inc., Worcester, Mass. Composition: Buchu, bearberry and pichi. Fraudulent therapeutic claims.—[N. J. 18541; March, 1932.]

Leo's Vegetable Female Cordial.—Brewer and Co., Inc., Worcester, Mass. Composition: Viburnum, sugar, alcohol (8.3 per cent by volume) and water. Alcohol content falsely declared. Fraudulent therapeutic claims.—[N. J. 18542; March, 1932.]

Leo's Wonderful Herb Tonic.—Brewer and Co., Inc., Worcester, Mass. Composition: Aloe, sarsaparilla, a small quantity of an iodine compound, methyl salicylate, sassafras oil, alcohol, sugar and water. For kidney and liver disorders, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18543; March, 1932.]

Leo's Nervine Tonic.—Brewer and Co., Inc., Worcester, Mass. Composition: Extracts of celery, alcohol (18.5 per cent by volume), sugar and water. Alcohol content falsely declared. Fraudulent therapeutic claims.—[N. J. 18544; March, 1932.]

Leo's Prescription No. 3568.—Brewer and Co., Inc., Worcester, Mass. Composition: Bearberry, alcohol (18.3 per cent by volume) and water. For kidney and liver disorders, etc. Alcohol content falsely declared. Fraudulent therapeutic claims.—[N. J. 18545; March, 1932.]

Leo's Rheumatic Elixir.—Brewer and Co., Inc., Worcester, Mass. Composition: Sodium salicylate (7.8 per cent), alcohol, sugar, and water. Fraudulent therapeutic claims.—[N. J. 18546; March, 1932.]

Leo's Antiseptic Powder.—Brewer and Co., Inc., Worcester, Mass. Composition: Boric acid, aluminum sulphate, salicylic acid, and small quantities of menthol, thymol, eucalyptol and methyl salicylate. Not antiseptic. For vaginal and nasal douche, etc. Fraudulent therapeutic claims.—[N. J. 18547; March, 1932.]

Maxey's Vegetable Tonic.—Maxey Medicine Co., Winston-Salem, N. C. Composition: Small quantities of caffeine, chloroform and ammonium chloride with oils of mustard, sassafras and clove, and water. For indigestion, etc. Fraudulent therapeutic claims.—[N. J. 18651; May, 1932.]

Maxey's One Minute Liniment.—Maxey Medicine Co., Winston-Salem, N. C. Composition: Chloroform, oils of mustard and clove, and methyl salicylate, with water. Fraudulent therapeutic claims.—[N. J. 18651; May, 1932.]

Number Twenty Seven.—Washington Wholesale Drug Exchange, Washington, D. C. Composition: Epsom salt, quinine sulphate, an iron compound and water. For influenza, malaria, etc. Fraudulent therapeutic claims.—[N. J. 18652; May, 1932.]

Anti-Rheumin.—Volz Co., Erie, Pa. Composition: Capsules containing acetanilid, acetphenetidin, salicylic acid and rhubarb. For rheumatism, pain, etc. Failed to declare presence or amount of acetphenetidin. Fraudulent therapeutic claims.—[N. J. 18654; May, 1932.]

K-K-K Keyser's Pink Kold Capsules.—Keyser Chemical Co., Inc., Cranoke, Va. Composition: Salol, guanine sulphate, camphor, ginger, red pepper and aloin. Fraudulent therapeutic claims.—[N. J. 18656; May, 1932.]

Gold Bond Sterilizing Toilet Powder.—Gold Bond Sterilizing Powder Co., Fairhaven, Mass. Composition: Talc and boric acid with small quantities of eucalyptol and methyl salicylate. Not antiseptic. Fraudulent therapeutic claims.—[N. J. 18657; May, 1932.]

Woolley's Bronchial and Lung Ointment.—John T. Woolley Remedy Co., Wabash, Ind. Composition: Oils of turpentine, mustard, sassafras and garlic, incorporated in petrolatum. Fraudulent therapeutic claims.—[N. J. 18658; May, 1932.]

Ward's Liniment.—Ward's Medical Co., Winona, Minn. Composition: Extracts of red pepper and sassafras, small quantities of camphor oil, with soap, alcohol and water. Fraudulent therapeutic claims.—[N. J. 18660; May, 1932.]

Uncle Jerry's Salve.—Jerry Hubbard Co., Miami, Okla. Composition: Petrolatum, linseed oil, rosin, Peru balsam and oils of cinnamon and sassafras. Falsely claimed to be antiseptic. Fraudulent therapeutic claims.—[N. J. 18663; May, 1932.]

Ulcicur.—Ulcicur Co., Inc., Chicago. Composition: (Liquid) a bitter drug such as gentian, alcohol, glycerin, sugar and water; (powder) bismuth subnitrate. For stomach ulcers, etc. Fraudulent therapeutic claims.—[N. J. 18665; May, 1932.]

Admirine.—Eucaline Medicine Co., Dallas, Tex. Composition: Hydrochlorides of quinine and cinchonidine, iron (ferric) chloride, a laxative drug, and a trace of eucalyptus oil with alcohol, sugar and water. "Body builder" and "blood medicine." Fraudulent therapeutic claims.—[N. J. 18666; May, 1932.]

Ergotole.—Sharpe and Dohme, Inc., Baltimore. Adulterated because below standard of strength claimed. Fraudulent therapeutic claims.—[N. J. 18667; May, 1932.]

Johnson's American Anodyne Liniment.—Chemicals and Drugs, Inc., Baltimore. Composition: Alcohol (14.8 per cent), a fatty oil, oils of turpentine and camphor, ammonia, ether and water. Fraudulent therapeutic claims.—[N. J. 18676; May, 1932.]

Narco Compound Syrup of Hypophosphites.—Hance Bros. and White, Inc., Philadelphia. Composition: Potassium, manganese, strychnine, iron, calcium and quinine hypophosphites in water. For tuberculosis, etc. Fraudulent therapeutic claims.—[N. J. 18677; May, 1932.]

Vegetable and Hemlock Oil.—Vegetable and Hemlock Oil Medical Co., Detroit. Composition: Chiefly turpentine oil. For lung disorders, catarrh, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18681; May, 1932.]

Mackie's Pine Oil.—Johnston-Mackie Co., Inc., New Orleans, La. Composition: Essentially a coniferous oil. For skin eruptions, asthma, rheumatism, etc. Falsely claimed to be germicidal. Fraudulent therapeutic claims.—[N. J. 18686; May, 1932.]

Tuttle's Family Elixir.—Tuttle's Elixir Co., Boston. Composition: Camphor oil and a coniferous oil, ammonia, ox gall, alcohol (about 30 per cent by volume) and water. For rheumatism, neuralgia, corns, sore throat, etc. Fraudulent therapeutic claims.—[N. J. 18688; May, 1932.]

Lignol Ointment.—Girard Pharmaceutical Co., Philadelphia. Composition: Petrolatum and a tarry oil. Falsely claimed to be antiseptic. For skin diseases, etc. Fraudulent therapeutic claims.—[N. J. 18695; May, 1932.]

Lignol Soap.—Girard Pharmaceutical Co., Philadelphia. Composition: Essentially soap containing a tarry oil. Falsely claimed to be germicidal. For skin diseases, etc. Fraudulent therapeutic claims.—[N. J. 18698; May, 1932.]

Wiley's Palatable Preparation (Extract of Cod-Liver Oil with Malt and Hypophosphites).—Hance Bros. and White, Inc., Philadelphia. Composition: Extracts of plant drugs, compounds of phosphorus, iron, manganese, calcium, potassium, quinine and strychnine, with alcohol (11.6 per cent by volume), glycerin, sugar and water. Did not contain the cod-liver oil vitamins. For tuberculosis, nervous prostration, etc. Fraudulent therapeutic claims.—[N. J. 18699; May, 1932.]

Girard Uterine Tonic.—Girard Pharmaceutical Co., Philadelphia. Composition: Ground plant drugs and extracts of plant drugs. For "female disorders." Fraudulent therapeutic claims.—[N. J. 18700; May, 1932.]

Spasmoline.—Spasmoline Co., McComb, Ohio. Composition: Essentially castor oil (28 per cent by volume), extract of ipecac, with alcohol, sugar and water. For whooping cough, croup, etc. Fraudulent therapeutic claims.—[N. J. 18727; May, 1932.]

Teethina.—C. J. Moffett Medicine Co., Columbus, Ga. Composition: Essentially bismuth subnitrate, chalk, sodium citrate, calomel, and sugar, flavored with cinnamon. For diarrhea, cholera morbus, worms, etc., in children. Fraudulent therapeutic claims.—[N. J. 18729; May, 1932.]

Breeden's Rheumatic Compound.—Breeden Drug Co., Inc., Memphis. Composition: Potassium iodide, extracts of plant drugs, sugar, alcohol and water. Fraudulent therapeutic claims.—[N. J. 18731; May, 1932.]

Thorson's Soap Lake Salts.—Thorson's Soap Lake Products Co., Soap Lake, Wash. Composition: Essentially washing soda (50 per cent), Glauber's salt (25 per cent), common salt (10 per cent) and small quantities of other salts, moisture (13 per cent). Cure-all. Fraudulent therapeutic claims.—[N. J. 18733; May, 1932.]

Germ-Elim.—Creotina Chemical Co., and Germ-Elim Co., Belleville, Ill. Composition: Guaiacol, sodium hypophosphite, sugar and water. For skin disorders, etc. Falsely claimed to be antiseptic. Fraudulent therapeutic claims.—[N. J. 18735; May, 1932.]

Plantlax.—Nature's Herb Co., San Francisco. Composition: Essentially powdered crude drugs, extracts of nux vomica and aloe and a trace of peppermint oil, with alcohol and water. For liver and kidney disorders, etc. Fraudulent therapeutic claims.—[N. J. 18738; May, 1932.]

Hazard's Preparation.—C. A. Hazard Chemical Co., Youngsville, Pa. Composition: Borax, boric acid, salicylic acid (12 per cent), glycerin and water. For all skin diseases, etc. Fraudulent therapeutic claims.—[N. J. 18741; May, 1932.]

Correspondence

"THE PATHOGENICITY OF THE FUSIFORM BACILLUS AND SPIRILLUM OF PLAUT VINCENT"

To the Editor:—In THE JOURNAL, March 11, is published an article by Lichtenberg and his associates on this subject. The fundamental problems of fusospirochetal disease seem to have completely escaped the authors. In view of the tragedies that will surely follow application of their implied therapeutic deductions, we feel obligated to protest. The title is misleading. From its wording one would expect a discussion of the spirochetes, but they are ignored except as vaguely confused with the terms fusospirochetes and fusiform bacilli and are proved nonpathogenic by that dangerous method of assumption. The title errs in stating "the fusiform bacillus." It would have been more correct to have stated "a fusiform bacillus" and that tentatively.

In fusospirochetal disease the spirochete for the following reasons is considered to be most important:

1. Fusospirochetal disease of the mouth is limited exclusively to the dentulous age; i. e., the spirochete age. Prior to the appearance and after the loss of the teeth, spirochetes cannot be found in the oral cavity. That is: no teeth, no gingivae, no anaerobic nidi, no spirochetes, no fusospirochetal disease.

2. The frequency of the spirochetes in the oral cavity parallels to a striking degree the absence or extent of pathologic changes in the gingival structures. Spirochetes are absent or rare in the normal mouth but are frequent in gingivitis and periodontoclasia.

3. Fusospirochetal disease not infrequently occurs in epidemics and as the victims develop this disease the one characteristic and striking change in the oral flora is the appearance of the spirochetes in increasing numbers.

4. Pathologic examination of the diseased structures shows the spirochetes leading the bacterial invasion into the normal tissues.

5. Specific treatment, particularly solution of potassium arsenite or the salts of bismuth topically, and the arsphenamines parenterally, alone or in combination, causes the rapid disappearance of the spirochetes from the lesions. Coincidentally with their destruction comes clinical improvement.

6. The fusospirochetal complex when injected into animals uniformly produces lesions of a constant character similar to those observed in man.

7. Lastly and of most importance, the acute penetrating and chronic progressive forms of this disease cannot be controlled except by the topical, parenteral or combined administration of the specifics.

The foregoing facts are known by students of spirochetoses.

The authors have ignored the spirochetal issue and have based their deductions on their studies of the "fusiform bacillus." We will discuss that "organism" and briefly point out the "fusiform problem." In that the authors have failed to take their readers into their confidence as to the bacteriologic status of their "organism" and have so prudently withheld associated information we have been unable to form a concept of it, cannot conjecture as to its taxonomic position and consequently are quite unable to discuss the "bacterium" per se. We have only the authors' implication that they were dealing with a "fusiform bacillus." This is hardly sufficient in view of the impossibility of finding any two authorities who will agree as to what a fusiform bacillus is.

Even if the morphologic, cultural, dissociative and ecologic characteristics had been determined, its taxonomic position would have to remain *sub judice* until some unanimity of opinion has been reached as to what the fusiform bacilli are. While some doubt the existence of the fusiform bacilli, the majority

of workers believe there are many kinds. In view of the controversy that exists in the literature, it would be interesting to have the authors' statement as to the motility, oxygen requirements, morphology, arsenic tolerance, method of reproduction and staining reactions of their organism. It would be of further interest to know whether or not they observed pleomorphic or dissociative forms in their cultures.

It seems hardly possible that the authors could have conceived of producing a fusospirochetal infection by the use of the fusiform bacilli alone or in association with the cocci, for so far as we have been able to determine these organisms have never been indicted as the etiologic agents that produce this disease. It appears that their observations are in agreement with those of the American Society of Bacteriologists as published in the Determinative Bacteriology compiled by Bergy in 1925, which states that the fusiform bacillus associated with *Borrelia* in Vincent's angina, ulcerative stomatitis, gangrene and wounds is not pathogenic. In the last analysis the onus probandi would seem to rest on those who maintain that these organisms are not pathogenic.

In that the authors base their therapeutic deductions from the study of nonpathogenic organisms and the observation of five, fortunately self limited cases of fusospirochetal disease, we feel that their efforts have been more literary than scientific; they should, however, be of definite negative value in promoting interest in the problem of the spirochetoses. The studies per se are not convincing. If the healing of the oral spirochetoses were as simple as the authors imply, it hardly seems possible that this disease would have by itself developed a more diversified therapeutic armamentarium than all the other infections of the buccopharyngeal cavity put together. The arsenicals were first introduced into the treatment of the spirochetoses by the Chinese, 2,000 years B. C. Since then many treatments have come and gone but the specifics are still with us and, when used, except in the case of noma, produce satisfactory results. Since 90 per cent of the acute cases heal spontaneously or subside into a chronic inactive state without treatment, it is at once apparent why so many "cures" have been periodically advanced by those who have had limited experience with this disease. Years of experience in the treatment of the spirochetoses convince us that most acute cases heal spontaneously in spite of the "usual treatment" but that the acute penetrating and chronic forms cannot be controlled except by the use of the specifics. It is impossible to prognosticate which individuals will develop a severe infection and until some one can more satisfactorily solve the problem of the "tenth case," it seems advisable to continue the routine use of the specifics.

L. J. BELDING, M.D.,

P. H. BELDING, D.D.S.,

Waucoma, Iowa.

[NOTE.—The letter was sent to Dr. H. H. Lichtenberg, who replies:]

To the Editor:—It appears that the Drs. Belding believe our report was not made in good faith.

The sixteen (not five) cases of acute ulcerative stomatitis we reported were only of the severe form. None of them went on to a chronic course. We allowed them to run their course untreated because previous reports of cases treated with various therapeutic agents were all lacking in a comparable group of simultaneously observed control cases. An evaluation of a therapeutic procedure in any self-limited disease cannot be made unless this condition is fulfilled. We were therefore interested in observing the natural course of this disease in children and comparing it with the claims made for the various drugs.

Since the writing of our communication, there have appeared two short articles by the Drs. Belding which explain more fully what they mean by chronic specific gingivitis (Specific Gingivitis, *J. A. Dent. A.* 19:1995-1997 [Nov.] 1932; The

Relationship of *Borrelia Vincenti* to Oral Disease, Dental Cosmos 74:1218-1219 [Dec.] 1932). These cases have an incipient onset and are not recognized until well advanced. They describe "a dissolution of the continuity of the gingival ligament, edema, retraction of the gums, absorption of the interdental papillae and bleeding," . . . "if unchecked, leads to the complete destruction of the bony socket and ultimate loss of the teeth." We have not encountered in children this condition ordinarily or formerly called pyorrhea alveolaris. It is probably an entirely different disease from acute ulcerative stomatitis, and we do not mean that any deductions as to the treatment of this condition should be drawn from our results with the acute ulcerative stomatitis in children. Since the Vincent organisms are found only in dentulous mouths, probably because they have here the partial anaerobic conditions necessary for their growth, since their numbers increase in man and guinea-pig both with clean surgical trauma and since the lesions heal up rapidly with great diminution in their numbers, we cannot agree with these authors that the "*Borrelia vincenti* is always pathogenic, its presence in the oral cavity is pathognomonic of an existing gingivitis either gross or microscopic."

HENRY H. LICHTENBERG, M.D., New York.

"THE DIATHERMY TREATMENT OF DEMENTIA PARALYTICA"

To the Editor:—In THE JOURNAL, June 3, appeared a paper on this subject by Freeman, Fong and Rosenberg.

I have always emphasized that in most instances deteriorated, demented patients will not go into a remission and will not improve. Early in my work the malarial type of fever curve was abandoned as a model. Long sustained temperatures with a high plateau ranging above 103.5 F. for eight hours and above 105.8 and not exceeding 107 for four hours, have been employed and recommended by us for at least two years. I will return to the rationale of this a little later.

The average number of treatments has not been confined to ten or twelve. On the contrary, I believe that the number of treatments necessary to obtain results in a case of dementia paralytica average about twenty. Most remissions take place after the fifteenth, twenty-fifth and thirty-fifth treatment. I never abandon a case until the patient has had at least fifty treatments. Lately, I have discovered that even higher temperatures than 105.8 are well borne, and I am treating a number of robust individuals now at temperatures ranging between 107.6 and 108. I have even sustained a fever of 108.5 for four hours in selected individuals. This may sound incredible to some, but I am sure that fever produced by physical agents differs widely from fever caused by toxins.

Bessemans of the University of Ghent, Belgium, and Warren of Rochester, N. Y., in experiments conducted with tissues infected with spirochetes, have shown that temperatures of 41 C. (105.8 F.) sustained for two hours or 42 C. (107.6 F.), sustained for one hour are definitely spirocheticidal both in vivo and in the human organism. Bessemans has even conducted his researches to the point of experimenting with two adjacent syphilitic lesions. One was heated with diathermy, while the other chancre, when he dealt with duplicate chancres, or the other secondary lesion, when secondaries were used, was allowed to go untreated. The subcutaneous temperatures were carefully measured by means of a thermocouple. Thus he found that the heated lesion not only showed no spirochetes, when examined by means of the ultramicroscope, but also that the rabbit's cornea could not be infected with the serum derived from such a treated lesion, which might possibly contain some virulent spirochetes. The untreated lesions grew rapidly and developed in the usual manner. All in all, 446 cases have been reported in the literature. Dr. Freeman has neglected the cases of

Epstein and Paul and the cases of Jacobson. Summarizing all these, 133 have been reported to be in an absolute state of remissions, while 153 have been discharged from the hospitals. In the latter group there was not a complete remission, since the patients are not now earning their living by constructive work.

Therefore I believe that Dr. Freeman and his associates have again proved just what I have always contended, that comparatively short nonsustained temperatures and comparatively few fever treatments are useless, and that the optimal range of fever of this type for therapeutic purposes lies above 103.5 F. Furthermore, this temperature should be maintained for at least eight hours, four of which should range above 105.8.

If this work of Freeman proves anything at all, it emphasizes the necessity of adapting medical procedures to the specific needs of the individual patient, and not being satisfied with a routine procedure in cases which are hopeless from the beginning.

CLARENCE A. NEYMANN, M.D., Chicago.

[NOTE.—The letter was referred to Dr. Freeman, who replies:]

To the Editor:—Dr. Neymann may be correct in his contentions (a) that the patients were of an unfavorable type and (b) that the treatment was inadequate according to present standards. My associates and I suggested the same possible objections. We know, however, that by malaria we can produce an arrest in most cases at any period of the disease, even the most demented.

Before we can accept Dr. Neymann's statements of the remarkable therapeutic effects of diathermy we must have (1) a prolonged period of observation and (2) histologic verification of arrest of the syphilitic process in the brain.

Eleven years' experience with malaria permits us to draw satisfactory conclusions, since these criteria have been met. Five years' experience with diathermy has given us no encouragement.

WALTER FREEMAN, M.D., Washington, D. C.

"POSTOPERATIVE CONTROL OF NAUSEA, DISTENTION AND VOMITING"

To the Editor:—I read with interest the article on "The Postoperative Control of Distention, Nausea and Vomiting" by Dr. Paine et al. in the June 17 issue of THE JOURNAL.

In April, 1923, I published an article (*Surgery, Gynecology and Obstetrics*, pp. 572-573) representing a similar experiment. I had tried the tube both nasally and by mouth. As I had some cases that should keep the tube in for several days, I found that it was better by mouth. Since the writing of this article, I have used the tube in many cases with excellent results.

I think that these writers should be complimented for their exacting work and their calling attention to the use of the nasal catheter suction siphonage.

CONSTANTINE ODÉN, M.D., Muskegon, Mich.

EPILEPSY ASSOCIATED WITH HYPERINSULINISM

To the Editor:—In THE JOURNAL, February 4, page 321, is an article entitled "Epilepsy and Narcolepsy Associated with Hyperinsulinism," by Dr. Searle Harris of Birmingham, Ala. These cases are interesting. Since 1924, when Dr. Harris reported the first case of hyperinsulinism associated with epilepsy, many more cases have been reported in THE JOURNAL. Since 1929 I have been studying such cases and have made the following observations: 1. These patients, regardless of the type of epilepsy, show a low blood sugar; especially is this true prior to the epileptic seizure. These blood sugars range from

35 to 65 mg. per hundred cubic centimeters of blood. 2. Low blood sugars mean an anoxemia, alkalosis and edema of the brain, which increases the possibility of convulsions. 3. High blood sugars mean acidosis and dehydration, which decrease the possibility of convulsions. 4. In trying to increase the blood sugar of epileptic patients, one combines the dehydration method of Temple Fay and the acidosis method of Cobb and Lennox.

More work should be centered about the blood sugar in epileptic patients.

MARVIN SANDORF, M.D., Johnson City, Tenn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACTION OF PENTNUCLEOTIDES IN NEUTROPENIA

To the Editor:—1. What is the action of pentnucleotides on the hematopoietic system? Of course it increases the number of polymorphonuclears, but what is the biochemical explanation for the stimulative effect on white blood cell formation; also is there any other effect on the blood-forming system? 2. How are the pentnucleotides prepared that are supplied in ampules for the treatment of agranulocytosis, and is there any danger of deterioration? T. L. HOWDEN, M.D., St. Joseph, Mo.

ANSWER.—1. It has been rather conclusively demonstrated that nucleic acid and its derivatives have a specific maturative and chemotactic influence on the neutrophil leukocytes. This has been demonstrated in experimental work by the increase in this type of cell in the peripheral blood and an increasing hyperplasia of myeloid elements in the bone marrow in rabbits. (Doan, Zerfas, Warren and Ames: *J. Exper. Med.* 47:403 [March] 1928). Furthermore, under long-continued chronic stimulation with injections of sodium nucleinate, extramedullary myelopoiesis has been produced in both the kidney and the spleen. These extramedullary foci show only neutrophil myelocytes without the presence of eosinophils, basophils, megakaryocytes or erythrocytes, which occur ordinarily in conjunction with myelopoiesis in the bone marrow.

The theoretical explanation and basis for this action is as follows: Sabin and her associates (Sabin, Doan, Cunningham and Kindwall: *Bull. Johns Hopkins Hosp.* 37:14 [July] 1925) have shown that there is a periodic increase in "nonmotile" neutrophilic granulocytes in the peripheral blood from time to time during the day. The disintegration of these cells releases primarily nucleic acid and its degradation products. Altmann originally isolated nucleic acid for the first time in 1877 from Miescher's "nuclein," obtained from the original residue of nuclear debris constituting the "pus" so readily available from human patients in those days of septic surgery. In 1924, Henry Jackson demonstrated the presence of pentose nucleotides in human blood. Thus, it is at least possible that the disintegration and turnover of granulocytes in the body may under ordinary circumstances furnish the stimulus through the nucleic acid for the delivery of replacements from the bone marrow. Pentnucleotide is proposed for use in granulocytopenia (idiopathic malignant neutropenia; agranulocytosis, with or without angina). Its usefulness in other conditions such as sepsis accompanied by leukopenia has not been demonstrated.

2. The method of preparation is described in N. N. R. 1933. The nucleotide is prepared by alkaline hydrolysis of yeast nucleic acid (N. N. R.) at room temperature according to the technic of Perkins and Jones (*J. Biol. Chem.* 62:557 [Jan.] 1925). The solution, after hydrolysis is complete, is made acid with acetic acid and the crude nucleotide precipitated as the lead salt, which in turn is decomposed with hydrogen sulphide and the filtrate containing the purified nucleotide is evaporated under diminished pressure at a maximum temperature of 50 C. to a small volume and neutralized with sodium hydroxide. From the resulting concentrated solution, sodium nucleotide is removed by absolute alcohol and dissolved in distilled water, and sufficient tricesol is added to make a 0.3 per cent solution. The final solution contains about 8 per cent of the sodium salts of what appear to be four nucleotides. After it has stood in an icebox for two weeks the pH is adjusted to 7.2 and the solution is run through a Berkefeld filter directly into small sterile ampules. (Jackson, Parker, Rinehart and Taylor, *THE JOURNAL*, Nov. 14, 1931, p. 1436). So far as is known, this material does not deteriorate after preparation.

RENAL GLYCOSURIA

To the Editor:—I am puzzled as to how best to treat a niece of mine, aged 20, always a bright student, usually close to the head of her class, and now ready for the senior year in college. Three years ago, when she first entered boarding school, she became enthusiastic in reducing, in the craze then at its height, though she was never fat. As she was leaving for school last fall I found sugar in the urine, yellow after a light meal, red brick-like after a full meal, and then sent her to Duke Hospital, where all examinations were negative except the sugar tolerance test, which was as follows:

| | Mg. per Hundred Cubic Centimeters | Urine |
|---------------------|---|--------|
| Fasting blood | 73 | 0 |
| ½ hour | 123 | 3 plus |
| 1 hour | 135 | 3 plus |
| 2 hours | 103 | 3 plus |

A month ago I found sugar in the urine ranging from 1.3 to 2.25 per cent, so I sent her back to the same clinic, where she remained five days with everything essentially negative except

| | Blood Sugar, Mg. per Hundred Cubic Centimeters | Urine Sugar, Per Cent | Urine, Cc. |
|--------------------|---|--------------------------|------------|
| Dextrose Tolerance | | | |
| Fasting | 100 | 0.33 | 200 |
| ½ hour | 145 | unsatisfactory | 50 |
| 1 hour | 167 | 1.25 | 22 |
| 2 hours | 150 | 0.95 | 13 |
| 3 hours | 110 | 0.40 | 104 |
| 4 hours | 100 | 0.40 | 105 |

The urine showed a specific gravity of 1.035, was acid, sugar was 4 plus, albumin plus, there were from 20 to 30 leukocytes per high power field, benzidine was 3 plus, acetone a trace (four days after the menstrual period). Roentgen examination showed no abnormality of the sella turcica. The impression was one of renal glycosuria. The patient was discharged, March 8. Last fall when sugar was first detected, she fainted an hour before the noon meal and again two days ago. Won't you kindly advise me from this brief account your suggestions as to diet and care? Should she eat sweets promiscuously and in abundance? Her ideal weight is 128 pounds (58 Kg.), her present weight 114 pounds (51.7 Kg.) and it has been from 110 to 116 pounds (50 to 52.6 Kg.) for the past year, never in her life quite up to the standard weight. I shall appreciate your advice. Please omit name.

M.D., Virginia.

ANSWER.—A diagnosis of renal glycosuria is based on: (1) the appearance of glycosuria with a normal or low blood sugar, (2) the fact that there is no constant or definite relationship between carbohydrate intake and dextrose excretion, (3) persistence of the glycosuria, (4) freedom from the symptoms of diabetes, (5) the fact that under observation the patient does not develop diabetes mellitus, and (6) the fact that the blood sugar curve after the ingestion of dextrose is normal. The blood sugar curve does not resemble that usually found in diabetes mellitus. It would seem advisable to exclude any disease of the thyroid or other ductless glands. Assuming this already to have been done, the patient should be allowed to have a normal diet. However, an early mild diabetes mellitus cannot as yet be completely excluded, and she should not be permitted to eat sweets promiscuously and should be under rather constant supervision in order to detect any possible early symptoms or signs of diabetes mellitus.

OVULATION AND FERTILIZATION

To the Editor:—1. Are the spermatozoa capable of fertilizing the ovum forty-eight hours after entering the female genitalia? 2. Is it proved that the unmated ovum retains its germinating ability for less than thirty-six hours? 3. Has the time of ovulation been proved? Is the statement that "ovulation occurs twelve to sixteen days before menstruation" correct and proved? Please omit name.

M.D., Maine.

ANSWER.—1. In the rabbit, sperms live at least ten hours. Hammond and Asdell found the range of fertility of sperms to be between twenty-four and thirty hours (fertility tested after artificial insemination). Two days after coitus, various authors found mostly dead sperms in the rabbit. In the human being, motile sperms were found seven and one-half days after coitus. However, the motility of these sperms diminished rapidly after thirty-six hours. Most of the sperms were dead at this time. It should be recalled that motility in sperms does not mean that such sperms have fertilizing properties. Whereas there are possibly notable exceptions, such as in the bat, in which copulation and fertilization are separated by five or six months, students are agreed that, in the human species, sperms are dead twenty-four hours after coitus. If by the question is meant the power of surviving sperms to fertilize when the sperms have been kept in a suitable buffered solution in vitro (and under otherwise favorable conditions), it can be said that such sperms have retained their fertilizing power in some animals for eight or nine days.

2. The unfertilized ovum is short lived according to the best evidence (including the human ovum). Such unfertilized ova

hardly live more than forty-eight hours. This statement implies that an unfertilized ovum could be fertilized thirty-six hours after liberation by the ovary and could germinate subsequently.

3. In five human cases the estimated time of ovulation (the ova having been recovered) was between the twelfth and the fourteenth day from the onset of the previous menses. In another instance the time of ovulation was placed on the eighteenth day after the first signs of menstruation. In the monkey, ovulation usually occurs on the thirteenth or fourteenth day. Ovulation may not only vary beyond these limits but even not occur although the menstrual periods occur regularly. The statement that "ovulation occurs twelve to sixteen days before menstruation" is fairly correct.

"Sex and Internal Secretions" edited by Edgar Allen, Baltimore, Williams & Wilkins Company, 1932, gives further information and bibliographic references.

TUBERCULOSIS AND PREGNANCY

To the Editor:—As far as I can ascertain, there is a considerable difference in opinion as to the advisability of interrupting pregnancy in arrested tuberculous cases. An interesting note from Paris in *THE JOURNAL*, January 21, would seem to indicate that final results are much better with interruption when done between the third and fourth month of pregnancy. Can you give me the latest thought and advice on this? I am confronted with the case of a woman, aged 34, with two living children, one 12 years of age, one 9. While they are not robust, the children seem to get along fairly well. Some years ago the woman was diagnosed as tuberculous by a competent man. She at that time had pleurisy with effusion and on moving into this district from Massachusetts had an evening elevation of temperature, which continued for a year. During this year she was mainly in bed at her home, which is admirably suited for such treatment. During the past year she has been able to be up and about and, with reasonable care against overexertion, gets along fairly well. Physical signs are lacking and roentgen examination of the lungs gives negative results. There has been no rise in temperature for the past year. She weighed 125½ pounds (57 Kg.) in May, 1932. The last menses occurred, Oct. 25, 1932. Dec. 3, 1932, her weight was 124 pounds (56.2 Kg.). Jan. 5, 1933, it was 123 pounds (55.8 Kg.). Physical signs of pregnancy are positive. She had some nausea in the beginning but has not had any for the past month. She is very anxious to go through with the pregnancy. I am concerned with the loss of weight. If an abortion is to be done, now is a good time. Please advise.

M.D., New Jersey.

ANSWER.—In this particular patient it seems that, although the usual three years of arrested tuberculosis has not expired, the patient is in sufficiently good condition to justify her in her attempt to carry her child to term and this procedure can be recommended. However, the usual treatment for tuberculosis, including diet, graduated exercises, graduated exposure to sunlight, and rest, ought to be punctiliously carried out during pregnancy.

The loss of weight is not of great concern, as many healthy women lose weight in the early months of pregnancy and put it on later. The treatment mentioned would take care of this matter.

While therapeutic abortion would not be recommended in this patient, if it should be decided on everything should be done under local anesthesia aided by morphine—no inhalation anesthesia of any kind being used.

AZOOSPERMIA

To the Editor:—My brother is 28 years old and has been married seven years. During this time his wife has never been pregnant, although they have used no contraceptive measures for the past two years. I have examined several condom specimens within an hour or two after coitus and have never found any spermatozoa. My brother is a healthy, husky athletic man with no physical defects; he has never had any venereal disease, mumps or other serious illness. No other members of the family are sterile. His wife is also in excellent health. Can you offer any suggestions as to possible etiology, prognosis and treatment? Please omit name.

M.D., New York.

ANSWER.—In every case of azoospermia, the first thing to determine is whether the testicles themselves do not produce any spermatozoa, whether the various genital tubes are occluded, or whether the two conditions coexist. There are other conditions besides gonorrhea that may cause closure of the tubes. To make this differential diagnosis, a rather large aspirating needle should be inserted into the testicle and some of the testicular fluid withdrawn for examination. If spermatozoa (even if they are immotile) are found in this aspirated fluid, one can definitely diagnose that the tubes are occluded and treat accordingly, generally by an epididymovasostomy. If no spermatozoa are found, one may assume that the spermatogenic function of the testicles is at fault. In this case one may experimentally put the patient on tablets of the anterior lobe of the pituitary, starting with 5 grains (0.3 Gm.) four times a day

and gradually increasing until the patient takes 20 grains (1.3 Gm.) four times a day; that is, 80 grains (5.2 Gm.) a day. With this an outdoor life and a diet made up largely of milk and eggs is advisable. If the metabolism test is much below normal, thyroid extract may be given in conjunction with the pituitary tablets. Repeated condom examinations after a long period of continence should be made.

MERBAPHEN (NOVASUROL) AND MERSALYL (SALYRGAN) IN EDEMA

To the Editor:—Please discuss the clinical results of novasurol and salyrgan in cardiac dropsy. Which is the more efficacious and less toxic? Please omit name.

M.D., Texas.

ANSWER.—The organic mercury compounds merbaphen (novasurol) and mersalyl (salyrgan) are useful drugs in the treatment of cardiac dropsy. These drugs differ in their toxic reactions. Merbaphen can be given subcutaneously or intramuscularly with little or no local reaction, while mersalyl may cause marked local reactions, the effect of which may lead to actual sloughing. On the other hand, it is now generally agreed that general toxic reactions are more frequent and more marked following merbaphen than after mersalyl. When intravenous injection offers no difficulties, mersalyl therefore is the drug of choice. However, when the peripheral veins are difficult to inject, as when peripheral edema is marked, merbaphen injected intramuscularly may give satisfactory diuretic results. A safe general rule is to give an initial dose of 0.5 cc. of either drug. If there are no ill effects, this dose can be increased to 2 cc. and repeated every three or four days until the dropsy is controlled. If given more frequently, these drugs may have a toxic action on the kidneys. The simultaneous administration of the acid salts, calcium chloride, ammonium chloride and ammonium nitrate increases their diuretic action. The prompt and efficient action of these organic mercury compounds alone or in combination with other diuretic substances has shown that a burden can be removed from a weakened heart by the rapid resolution of dependent edema.

CHROMIDROSIS AND CYANEPHROSIS

To the Editor:—Last summer I was consulted by a woman patient who told me that, when she washed her hands and forearms, or when she took a bath, the water turned blue. Thinking that it was caused by the soap that she used, she took baths without soap, with the same result. This disorder is called "cyanephidrosis." I know nothing of this condition and ask that you enlighten me.

MORRIS HENRY, M.D., Helena, Ark.

ANSWER.—Every possible attempt should be made first to make certain that the blueness of the water is not due to some natural cause. Extremely hard water is likely to turn blue in the presence of various chemicals either in soap or on the surface of the body.

The first indication is to make sure that it is a real case of cyanephidrosis, blue sweat. A portion of the skin known to be involved should be cleansed carefully with soap and water by the physician or his assistant, then washed with ether, this allowed to evaporate, and collodion applied. If the blue color reappears under this, or when this is removed by the physician, the case may be accepted as genuine.

True chromidrosis is very rare and the black form is most common, the blue form coming next in frequency. In most cases the sweat is colorless when it first appears and then turns blue, leaving a deposit of dustlike particles about the sweat pores. These are soluble in oils or fat solvents more readily than in water, leading to the suspicion that the sebaceous glands may be involved; but the rapidity with which the color is produced, its deposit about the sweat pores rather than about the hair follicles, and its close connection with the activity of the sweat glands allays such a suspicion. The fact that the sweat glands themselves produce oil makes such an explanation unnecessary.

Various explanations of the nature of the blue deposits have been made. The common one, credited to Bizio and Hoffmann, is that it is indigo, derived from indican, formed in the intestine. A reaction for indigo is not always to be obtained, however. Collman and Scherer call it ferrous phosphate and Fordos states that it is procyaniue. Furthermore, blue sweat has been observed in copper workers, though the common color of their perspiration is green.

Except for the last mentioned class, all patients with cyanephidrosis have been neurotic individuals, mostly women. Pelvic and menstrual disorders have been associated in some cases. The intestinal conditions should be studied, including the flora of the tract. Constipation should be corrected and any underlying nervous condition treated.

HEADACHE AND MENSTRUATION

To the Editor:—A woman, aged 27, married, with one child aged 15 months, suffers from unilateral sick headache, initiated by a tired feeling and, at times, depression. The pain is felt through the right eye and the right side of the head to the occiput. There is no tenderness of the scalp or neck and no vertigo. The attacks usually end in sleep. They are most likely to occur after she has been very busy and are almost certain to occur after entertaining. The patient first menstruated at 13. She had sick headaches from 14 to 16, and they became severe after 16. The patient was unable to associate in her mind the attacks with her periods. The intervals between periods vary from twenty-one to twenty-eight days. The periods are of six days' duration and, prior to pregnancy, four days. There is a free flow for three days. They are without discomfort, though she had painful menstruation before pregnancy. Labor was normal. The headaches occur irregularly between one and three weeks apart and last from twenty-four to forty-eight hours. During the nine months of pregnancy and the first six months of the nursing period the patient had but three attacks, one early in pregnancy, one immediately after return home from the hospital, and one in April, 1932 (having nursed the baby from the previous October). During this time menstruation did not appear. From April to July (the end of the nursing period) and up to the present, the patient has menstruated every three to four weeks. She had headaches as of old (except less severe) from April on until July, much milder than in the past but since July again increasing in severity. Does the practical disappearance of this affliction during such a period of suspended menses suggest any direct manner of attack by endocrine therapy? The general health is good. Physical examination is negative. Please omit name and address.

M.D., California.

ANSWER.—In spite of the apparent relationship between the presence of menstruation and the headaches, it is highly doubtful whether endocrine therapy will be of any avail except psychically.

Just what glandular products to try is difficult to say. During the menstrual cycle, the important hormones present in the blood are the female sex hormone, or folliculin in the first half and progesterin in the second half of the cycle. It is hardly likely that these are responsible for the headaches, and, even if they were, no way of eliminating them is known except by pregnancy. On the other hand, during gestation, large amounts of the anterior pituitary hormones circulate in the blood. It may be that the presence of large quantities of these hormones prevents the appearance of the headaches; but this also is conjectural. One way to try to find out is to administer ampules of anterior pituitary hormones hypodermically every day for a number of weeks. However, the anterior pituitary hormones are most likely not the important factor in this case because the headaches subsided not only during pregnancy but also during the first six months of nursing.

The eyes, ears and sinuses should be carefully examined, but it may be that these headaches are similar to migraine and therefore difficult to overcome.

POSTPARTUM EXERCISES

To the Editor:—As there appears to be a marked difference of opinion with regard to the benefits of postpartum exercises, will you give me a routine for the normal puerperium? Kindly omit name.

M.D., Michigan.

ANSWER.—Beginning on the second day after delivery, patients should be placed in the Fowler position part of the day. In addition, they should lie on their abdomen for about fifteen to twenty minutes three or four times a day. These changes in posture help to maintain the downward drainage of the lochia and keep the vagina free of lochia, thereby diminishing the chances of infection that may result when the cervix lies buried in a pool of debris and bacteria. On the third or fourth day of the puerperium, patients may have a light general massage of the entire body except the abdomen and the breasts. This is passive exercise. Two days later, systematic exercises involving the arms, legs and abdomen are begun and carried out while the patient is in bed. These exercises improve the circulation, strengthen the tone of the abdominal muscles and hasten the patient's general recovery. The following exercises are recommended: The pillows are entirely removed or one pillow is placed under the patient's back. A series of deep breaths is taken. During inspiration the arms, which lie at the sides, are slowly raised either above the head or upward toward the ceiling. On expiration the arms are slowly returned to their original position. Then the head is raised and lowered a number of times, and following this the extended legs are elevated and lowered one at a time and later the two at the same time. This is followed by flexion of both the thigh and the knee of each leg and then of the two legs together. Next the flexed thighs are abducted a number of times. Then the patient assumes a sitting position with the arms extended along the sides of the body and, if the patient is able, she should repeat this exercise with the hands behind her head. This is followed by the knee-chest position, which should be

properly carried out and maintained for gradually increasing periods beginning with a five minute period. After the third week the patient may be instructed to perform the "monkey trot," that is, walk fast on both hands and feet a number of times a day, or she may be asked to practice the "mule kick." In all cases the exercises should consume only a few minutes at the start, and each day the time should be increased, depending on the patient's general feeling and her endurance. If the exercises increase or bring about a return of red lochia, they should be stopped for a few days.

TENOSYNOVITIS AND MYOSITIS

To the Editor:—A man, aged 27, has had a sensation of friction on flexing certain muscles for the past four years. It started in both knees and next involved the right elbow, then the left elbow and now is present in all those joints and also the left shoulder. On palpation, flexion and extension with the antagonistic muscles tensed gives a sensation of crepitus and the creaking can be heard. There has been no swelling or any other evidence of inflammation in either the muscles or the joints. He had gonorrheal urethritis six years ago, which was treated and apparently cured. He shows urticarial lesions irregularly placed on the arms and trunk. He works as a rancher. Any information on the cause and treatment of this condition would be appreciated. Please omit name.

M.D., South Dakota.

ANSWER.—This case may be classified as multiple tenosynovitis, possibly in a group called occupational synovitis. There may be an element of multiple myositis, which is analogous to such conditions as rider's knee, soldier's shoulder, fencer's bone and dancer's bone. Other conditions that come to mind are interstitial calcinosis, arthritis, myositis, synovitis, myositis ossificans, myositis ossificans para-arthritis and occupational tenosynovitis due to repeated injuries.

Many of these cases follow infectious disease and are not of traumatic origin. This patient may be developing a generalized calcinosis or generalized tenosynovitis. There may be an element of myofasciitis or fibrositis ossificans progressiva.

These various conditions are caused by infection and trauma. Trauma may be one severe blow or multiple minimal strains or sprains. The occupation of a rancher may account for these.

The tendon in a tendon sheath may be compared to an umbrella in an umbrella cover. If there is no free play of a tendon in its sheath, palpable and audible crepitus may be noted when the tendon is active. There may be a dry tenosynovitis.

In the treatment, the first consideration is rest. This may necessitate a change of occupation. The patient should note those activities which cause crepitus and discomfort and avoid them, just as one should avoid those foods which are known to cause gastric or intestinal disturbances. The application of a plaster-of-paris cast for a few days would make a good test of whether this form of treatment is applicable in this case. Later a removable splint should be tried. The splint should be removed twice daily for radiant heat and diathermy. Massage should be very cautiously tried. Its continued use depends on the response.

EFFECTS OF IODINE ON INSULIN IN HYPERTENSION AND DIABETES

To the Editor:—The wife of a local colleague had a cerebral hemorrhage seven weeks ago and now has hemiplegia on the right side. She is being given potassium iodide in fairly large doses at present. She has also diabetes mellitus and takes 40 units of insulin daily. Jensen, Schöck and Sollers (J. Biol. Chem. 98:93 [Oct.] 1932) have stated that a definite amount of iodine will permanently inactivate insulin. What influence should this report have on the treatment of such a case? I should be pleased to receive any information possible relative to the coincidence of hypertension and diabetes and also the treatment of hemiplegia due to cerebral hemorrhage either with or without complicating diabetic conditions.

M.D., Ohio.

ANSWER.—The experiments cited on the inactivation of insulin by iodine were conducted in a test tube, not in an animal, and were carried out with standard solutions of iodine rather than with a solution of potassium iodide. One milligram of amorphous insulin represents about 15 units and of crystalline insulin about 24 to 27 units and it was found that this quantity of insulin was rendered inactive by 0.3 cc. of hundredth normal iodine solution, or approximately 0.4 mg. of iodine. It is true that in 1 Gm. of potassium iodide there would be 0.765 Gm. of iodine, but the iodine in potassium iodide is not in a dissociable, reactive form and is not therefore likely to cause inactivation of insulin, which presumably the free iodine accomplishes possibly at the disulphide linkage, as suggested by Jensen and his co-workers. It is improbable that free iodine is set free in the body when potassium iodide is given, because some of the toxic effects of free iodine would be manifested.

There has apparently been no suggestion of inactivation of insulin with diabetic patients taking potassium iodide for bron-

chitis or syphilis, or with cases of hyperthyroidism when compound solution of iodine is employed.

Diabetic patients live so long and die so old that at present approximately half of the deaths of diabetic patients are due to arteriosclerotic complications, chiefly in the legs and heart, less commonly in the head and kidneys; and in many of these conditions high blood pressure is a factor.

For the treatment of hemiplegia due to cerebral hemorrhage the questioner is referred to the standard medical treatises. If the condition is associated with diabetes, insulin can be used with advantage under close supervision, but only with frequent tests of the urine and blood sugar, because hypoglycemia as well as rapid falls in the blood sugar must be avoided.

POISONING IN TINNING INDUSTRY

To the Editor:—A man, aged 34, with a severe irritated condition of the upper respiratory passages, especially the nasal mucous membrane, has no apparent constitutional symptoms. He is a tinner by trade, occupied in retinning cans. His procedure is to dip cans that have been "fluxed" with a mixture of hydrochloric acid and pure zinc into a vat of pure molten block tin. When this is done a heavy cloud of acid smelling fumes arise, which he is unable to avoid inhaling. He has tried some type of mask and finds that the fumes seem to condense under the mask, causing a dermatitis. The questions he would like to have settled are: 1. Is there any danger of absorption of any of the materials or combination of materials used in this process that might be the cause of some type of chemical poisoning? 2. Is there any particular type of mask he could wear to avoid the irritation of his skin and mucous membranes? I believe the condition solely one of surface irritation from the fumes of hydrochloric acid but would appreciate your opinion on the matter. Please omit name.

M.D., Maryland.

ANSWER:—Respiratory inflammation is a reasonable expectancy in this operation. Although the terms "pure zinc" and "pure molten block tin" appear in the query, such purity is not always represented by facts. Arsenic as an impurity in traces has rarely led to poisoning in which respiratory inflammation (especially of the nasal mucous membranes) is a feature. Zinc chloride may be used along with the acids in the preparatory processes. In the tin, lead has, in the past, been present at least as an impurity, in quantities sufficient to produce plumbism. Assuming that the metals as used are in fact pure, the respiratory disturbances may be accounted for as the result of acid vapors and zinc fumes. The tin is essentially harmless, although the fumes from any molten metal may not be wholly exculpated. The formation of some zinc chloride under the conditions stipulated in the query is probable. As for the direct questions:

1. Systemic poisoning may arise if other metals (arsenic, lead) are present in appreciable quantities as impurities. Acid vapors and zinc fumes are unlikely to cause direful systemic disease, although the zinc may lead to "zinc chills"—an acute affair; and the acids may lead to gastric hyperacidity and possibly to ulceration.

2. Best protection is likely to be obtained through the use of the hose type of mask rather than the filter type. The latter masks may in truth be shown to be efficient, but the amount of care required to keep them so is sometimes onerous. A discussion of the efficacy of respirators may be found in the February, 1933, issue of *National Safety News* (page 21) and U. S. Public Health Bulletin 177, 1928.

Local suction apparatus at the rim of the molten metal tank is practical. A discussion of this procedure for another industry may be found in *Public Health Reports* 43:2330 (Sept. 7) 1928.

SURPLUS TISSUE IN ABDOMINAL WALL AFTER PREGNANCY

To the Editor:—A woman, aged 30, who has had two children weighing 10 and 11 pounds (4.5 and 5 Kg.), respectively, at birth, shows a surplus of skin folds over her abdomen, plus the usual scarring caused by the previous gravid condition. She is slim and therefore feels that the surplus tissue is disfiguring. I would appreciate any suggestion that you may offer as to treatment or operative procedure, if any. Please omit name.

M.D., Chicago.

ANSWER:—The redundant skin may be held together with a girdle without operation. Operation for such an excess of skin carries a minimum of risk, the greatest being that of infection. The operation may be done by a transverse excision when the lower part of the abdomen is pendulous. In other cases a vertical excision may be performed. The only objection to the vertical incisions is that they may have to go above the umbilicus. If this is not desirable, two vertical excisions may be performed one on each side of the abdomen. The amount of skin to be removed varies, but the sutured edges should come together without tension or leaving wrinkles. Careful approximation must be obtained or there may

be an objectionable scar. The individual longitudinal scars resulting from pregnancy are usually too numerous to remove. This might be attempted in a few instances of very broad scars. As a rule, a good cosmetic result may be expected from a skilful operation.

SWELLING OF SCROTUM AFTER HERNIOTOMY

To the Editor:—Three months ago a modified Bassini type operation was done for right inguinal hernia in a youth, aged 20. At the time of operation, several veins belonging to the pampiniform plexus were incised and ligated. When the floor of the canal was reformed, special precautions were taken to strengthen it and the external ring, as the patient is asthmatic. Possibly the external ring was made too tight. Two days later, swelling of the right scrotum occurred. This receded under support and an ice bag but since then the scrotum has remained about three times the normal size and on several occasions considerably larger, and now the left scrotum also is slightly swollen, both receding slightly under support. What would be the logical cause? What is the prognosis? Is this swelling apt to persist through life? What besides scrotal support and ice bags can be done? Is another operation indicated to relieve a possible constriction of the new external ring? If the condition is circulatory rather than constriction of the vas, what can be done and why has it not cleared up rather than becoming worse, as lately? Please omit name.

M.D., California.

ANSWER:—The swelling of the scrotum following operation may have been due either to a hemorrhage or to venous obstruction. The persistent edema would indicate that there is obstruction to the veins of the cord.

The swelling may persist, become worse or gradually clear up; but, owing to the danger of atrophy of the testicle, reoperation is indicated at this time. The veins of the cord should be freed from pressure and any hematoma should be removed. Careful reconstruction of the inguinal canal with avoidance of any constriction of the cord will almost surely give relief.

The modified Bassini operation with the inclusion of the cord between the imbricated external oblique fascia is not so satisfactory as other methods of repair.

Any method of repair should avoid constriction of the cord even at the expense of a recurrence. However, it is not always possible to determine the constriction that may result from a sharp edge of fascia. After repair is complete it is always wise to examine for a possible constricting sharp edge and correct it by cutting or resuturing the fascia.

VERTIGO

To the Editor:—A man, aged 25, in good physical health, complains of vertigo and of impaired hearing in the left ear. The past history is negative for any severe illness and any definite eye ear, nose and throat infection of note. Vertigo and impaired hearing began about nine months ago and have gradually increased, with short remissions. The vertigo is aggravated by physical exercise and is temporarily relieved (incompletely) by lying down. A change in position from lying to sitting makes objects about the patient seem to whirl around. There is also difficulty in focusing the eyes, and this is more marked when the vertigo is more pronounced. Recently there has been marked difficulty in locating sounds. The patient has a speech difficulty (stammering) that has persisted since childhood. He was also left handed as a child. A diagnosis of labyrinthitis was made and a series of pilocarpine swabs were carried out with no definite change in the condition. From this information can you make any suggestion as to diagnosis or treatment? Please omit name.

M.D., Oklahoma.

ANSWER:—Changes in the blood or the blood pressure may be responsible for the condition noted. A careful blood examination and examination of the blood pressure should be carried out with the idea that possibly a hemorrhage or some other vascular disturbance may have occurred in the inner ear. Serologic tests should also be made to eliminate the possibility of syphilis. If there is much vertigo, complete rest should be enforced for a time, while the various diagnostic measures are being pursued. The use of sedatives such as bromides, and alteratives such as iodides, is sometimes of great benefit.

VARICOSE VEINS IN PREGNANCY

To the Editor:—What is the best treatment for varicose veins in a woman now four months pregnant? She has had three children. The veins are not very extensive but they are causing her enough pain to keep her awake at night. Is it better to have them treated surgically or elastic stockings advised? The veins are in the calves of the legs and also in the thighs. Please omit name.

M.D., Michigan.

ANSWER:—The injection treatment of varicose veins during pregnancy is successful in properly selected cases. The same tests for patency of deep circulation and for latent infection should be used that are employed in any other patient suffering from varicose veins. If the long saphenous vein is palpable and incompetent, it should be ligated close to the saphenofemoral junction, preliminary to injections. Activation of a

latent infection must be carefully avoided. Elastic stockings are useful as additional support but will not obviate the danger of postpartum thrombosis in the dilated veins. Injections are preferably avoided after the seventh month of pregnancy. The physician who undertakes the treatment of varicose veins during pregnancy should be aware of the limitations and dangers of this method and should have had experience in treating veins with injections.

POLLENS IN MICHIGAN

To the Editor:—Kindly inform me as to the pollen content (giant and dwarf ragweed) in Marquette, Mich. Which locality would be better for a tuberculous person affected with hay fever (ragweed) Mackinac Island or Marquette?

SAMUEL DESSEN, M.D., Chicago.

ANSWER.—No figures are available on the ragweed pollen content of the air at Marquette, Mich. Investigations at Sault Sainte Marie, Mackinac and Port Arthur, Canada, as well as at numerous other locations farther south, would lead to the belief that ragweed pollen is about as plentiful in Marquette as at Sault Sainte Marie or at Mackinac, where the ragweed pollen content of the air is about one tenth as much as in central Michigan, Wisconsin or Illinois.

There should be complete, or almost complete, freedom from ragweed at Marquette when the winds are off the lake, but the prevailing southwest winds are capable of carrying more than enough pollen to aggravate symptoms in most ragweed-sensitive persons. There would probably be no choice between the two places mentioned for a tuberculous patient with hay fever. Pollen statistics were given in THE JOURNAL, June 10, page 1848.

CHEILITIS AFTER PERSISTING HERPES OF LIP

To the Editor:—A man, aged 30, had a "cold sore" in January, 1930. It healed but always split. He allowed this to continue for four months and then had it canterized with the actual cautery two or three times. Then he had ultraviolet ray treatments to no avail. He had it canterized again and still got no results. A surrounding cheilitis developed and he finally went to the Mayo Clinic, where the infiltrated area was removed, but he still has a cheilitis. Boric acid ointment, Lassar's paste, ointment of rose water and tar ointments will not clear it up. What else do you suggest?

M.D., Illinois.

ANSWER.—It is possible that the continued inflammation is the result of repeated irritation by cautery and other treatment. In view of the fact that the lesion has already been removed and for that reason any beginning carcinoma has been removed, the lesion might be treated expectantly for a while, only a mild greasy coating, such as oil of theobroma, being used. These suggestions of necessity are of limited value, owing to the fact that it would be better to see such a lesion to express a comprehensive opinion about it.

ETIOLOGY OF REPEATED ABORTIONS

To the Editor:—I note with interest and disappointment your replies to M.D., North Dakota, and M.D., New York, on the etiology of repeated abortions (THE JOURNAL, June 17, p. 1937). Syphilis, so frequently given as a cause in the older textbooks, is rarely seen by the consultant in obstetrics. In order to check this statement I have just reviewed my cases, twenty-one in number, in which two or more spontaneous abortions occurred, and in not one was there a positive Wassermann or Kahn reaction in either husband or wife, nor was there any clinical evidence of syphilis or any microscopic evidence among those cases in which uterine products could be obtained. Certainly in this series syphilis played no part. These were private cases, however, and objection may be raised to my figures on that ground. While it is admittedly true that a similar study of clinic material would probably yield a higher incidence of syphilitic infection, I am convinced that syphilis is more of a coincidence than a true exciting cause. In my experience syphilis does play an important part in prematurity but a negligible one in repeated abortions.

Your reply to these queries did, of course, touch on other causes of repeated abortions, but my complaint is based on undue prominence given syphilis and the minor rôle attributed to other causes.

Chronic infection, especially oral, has been so frequently discussed in the literature of the past ten years in this connection as to be almost an overworked thesis; but apparently its importance remains in the knowledge of the special worker. Pioneer studies were made by Talbot of Massachusetts and Curtis of Chicago, who have reported their observations frequently and convincingly. I brought this to the attention of the dental society of South Carolina (J. South Carolina Dental A., 23: 45, 1930), but mine was a small contribution compared with that of the writers named.

Since reading these answers to your correspondents it has occurred to me that the publication of a study of a large number of repeated abortions might be of special interest and value. I believe syphilis is an incidental infection and, to quote from another answer on page 1937, "it is unfortunate that the presence of syphilis in a patient is often rendered responsible for all the pathologic conditions in that patient."

ROBERT E. SEIBELS, Columbia, S. C.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVigline, Juneau.
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. Application should be filed before August 1. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.
NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.
PUERTO RICO: San Juan, Sept. 5. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

Hawaii April Report

Dr. James A. Morgan, secretary, Board of Medical Examiners, Territory of Hawaii, reports the oral and written examination held in Honolulu, April 10-13, 1933. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. Five candidates were examined, 3 of whom passed and 2 failed. One physician was licensed by endorsement. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|---|--------|------------|----------|
| University of Colorado School of Medicine..... | (1932) | | 83.3 |
| Northwestern University Medical School..... | (1932) | | 82.7 |
| University of Nebraska College of Medicine..... | (1931) | | 85.1 |

| College | FAILED | Year Grad. | Per Cent |
|---|--------|------------|----------|
| University of Santo Tomas College of Medicine and Surgery | (1920) | 54.2 | 60.3 |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Per Cent |
|---|-------------------------|--------------|----------|
| Northwestern University Medical School..... | (1931) | N. B. M. Ex. | |

*This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

Maine March Report

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held in Portland, March 14-15, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. One physician was licensed by reciprocity and one by endorsement. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|---|--------|------------|----------|
| College of Medical Evangelists..... | (1931) | | 81.9 |
| Harvard University Medical School..... | (1931) | | 88.1 |
| Long Island College Hospital..... | (1897) | | 75.5 |
| University of Rochester School of Medicine..... | (1932) | | 83 |
| Regia Università di Napoli. Facoltà di Medicina e Chirurgia | (1932) | | 77.7 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|-------------------------|------------|------------------|
| University of Cincinnati College of Medicine..... | (1923) | | Ohio |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Per Cent |
|---|-------------------------|--------------|----------|
| Cornell University Medical College..... | (1929) | N. B. M. Ex. | |

Ohio Reciprocity Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports 13 physicians licensed by reciprocity with other states and one physician licensed by endorsement, April 4, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|-------------------------|------------|------------------|
| University of Arkansas School of Medicine..... | (1929) | | Arkansas |
| Emory University School | (1931) | | Georgia |
| University of Louisville | (1914) | | Kentucky |
| Baltimore University Sch | (1905) | | W. Virginia |
| Johns Hopkins University | (1929) | | Maryland |
| University of Maryland School of Medicine and College of Physicians and | (1931) | | Maryland |
| Detroit College of | (1922) | | Michigan |
| Univ. of Michigan | (1927) | | Michigan |
| St. Louis University | (1930) | | Missouri |
| Memphis Hospital | (1902) | | Mississippi |
| University of Manitoba Faculty of Medicine..... | (1930) | | W. Virginia |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Per Cent |
|--|-------------------------|--------------|----------|
| McGill University Faculty of Medicine..... | (1929) | N. B. M. Ex. | |

Oklahoma March Report

Dr. J. M. Byrum, secretary, Oklahoma Board of Medical Examiners, reports 7 physicians licensed by reciprocity with other states, and one physician was reregistered, March 14-15, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--------------------------|-------------------------|------------|------------------|
| University of Louisville | School of Medicine | (1925) | Kentucky |
| " " | " " | (1930) | Missouri |
| " " | " " | (1929) | Mississippi |
| " " | " " | (1906) | Ohio |
| " " | " " | (1931) | Tennessee |
| " " | " " | (1931) | Tennessee |
| Dayton University | College of Medicine | (1916) | Texas |

Book Notices

Allergy and Immunity in Ophthalmology. By Alan C. Woods, M.D., Associate Professor of Ophthalmology, Johns Hopkins Medical School. The Wilmer Ophthalmological Institute, the Johns Hopkins Hospital and University, Monograph No. 1. Cloth. Price, \$2.25. Pp. 176. Baltimore: Johns Hopkins Press, 1933.

This is dedicated by the author to his father, the late Dr. Hiram Woods, who was one of the most universally beloved men in American ophthalmology. There is a foreword by Dr. W. H. Wilmer in which he aptly says, "We are just upon the threshold of our knowledge of immunological adaptation and this monograph pushes open the door a little wider." The author has divided his material into eight chapters, on general considerations on anaphylaxis, allergy and immunity; experimental studies on general ocular immunology; relationship of allergy to focal reactions in the eye; allergic conjunctivitis; antigenic properties and reactions of lens protein and uveal pigment; syphilis; tuberculosis, and therapeutic procedures. Each chapter is concluded by an adequate bibliography and at the close of the book is an author index and a subject index. It is not easy reading because of the nature of the subject, but the well chosen diction puts the matter clearly before the reader who is not immunologically trained. Particularly well done is the chapter on allergy and focal infection, wherein is a clear-headed analysis of the etiologic rôle of focal infection as pertains to ophthalmology. Conclusive proof is lacking that an allergic mechanism may be responsible for inflammatory lesions of the eye from chronic foci of infection, but much of the modern investigative work is pointing in that direction. Two of the best chapters are those dealing with the lens and with uveal pigment, for much of the modern knowledge of the immunologic reactions of those tissues has emanated from the laboratory of the author. The chapter on tuberculosis is sound, as is the treatment outlined for those conditions. The book is worth while for every ophthalmologist.

Vitamins and Other Dietary Essentials. By W. R. Aykroyd, M.D. Cloth. Price, 7/6. Pp. 218. London: William Heinemann, Ltd., 1933.

This book in everyday language gives a brief account of the more popular aspects of the science of dietetics for the general reader and the professional classes whose work lies in other fields. Chapters are devoted to the nutritional essentials, nutritional disorders, diet and teeth, minerals in nutrition, dietary values of foodstuffs, nutrition, physique and health, and the perfect diet. The extent of malnutrition is stressed. Public consciousness of this fact is a first step toward improved nutrition. The author is thoroughly conversant with his subject; his judgment on the practical significance of scientific nutrition is sound.

Industrial Microscopy: A Book Dealing with the Use of the Microscope and the Preparation of Specimens for All Who Use the Microscope in Industry. By Walter Garner, M.Sc., F.R.M.S. Cloth, Price, \$5. Pp. 389, with 208 illustrations. New York & London: Isaac Pitman & Sons, 1932.

The main object of this book, as stated in the preface, is to present in one volume an adequate number of methods of microscopic technic of general interest to the technical chemist. With this in mind, the author has attempted to make a judicious arrangement of the subject. Chapters I to VIII and XI contain sections on microscopic technic and accessories, measurement, counting and drawing, photomicrography, microchemical technic, inorganic and organic micro-analysis, and textile and paper-making fibers. The subject matter is pre-

sented in a clear and concise manner such as might be expected in a brief introductory book. It is disappointing, however, to note that only a page is devoted to metallography, which is included under accessories as surfacing metals for examination. The remaining chapters, occupying more than half of the volume, deal with botany, microbiology and insects, which will probably be found to be of more or less value for some industrial chemists. The advisability of combining two such dissimilar and highly specialized subjects as bacteriology and crystallography in a brief textbook is in itself problematic. It would seem impossible to do justice to either of them when treated together in a single volume. Obviously, the author's plan in presenting disconnected technics and descriptions of elementary structures without practical applications is apparent in these chapters. Microbiologic technic and entomology occupy some 100 pages. The chapter on bacteria follows closely the similar section appearing in Bergey's Manual of Determinative Bacteriology. The section on the examination of water consists of only a few pages, a treatment entirely inadequate for practical purposes. The chapters on botanic technic and structures are followed by several pages of practical applications on grains and starches, comprising, perhaps, the most useful part of the book. The analyst who has to consult a textbook for the identification of vegetable specimens, the microbiologic examination of water, beverages, foods, meat products, milk, soils, or tanning liquors will find it serviceable.

Cinquante techniques chirurgicales de Henry-Delagenière. Recueillies et rédigées par Yves Delagenière. Paper. Price, 50 francs. Pp. 315, with 63 illustrations. Paris: Masson & Cie, 1933.

This consists of a rather detailed description of the operative technic employed by Delagenière in what may be considered the fifty most common operations in general surgery operations on the stomach, intestine, genito-urinary system, head, neck and extremities. For almost every operation, one or more original procedures are described. The book can hardly be recommended as a textbook for students or as a source of information for surgeons, because the general field of surgery is not covered and because the subject matter is limited to a description of operations with little or no discussion of indications for operation or details of postoperative management. This is a worthy memorial volume to one of the leading exponents of modern surgical technic in France. Delagenière, educated in Paris, began his professional career in Mons, where he developed one of the leading surgical clinics in France. His major contribution to surgery was made during the World War, when he demonstrated the value of osteoperiosteal bone grafts.

The State and Higher Education: Phases of Their Relationship. By Fred J. Kelly, Chief, and John H. McNeely, Research Assistant, the Division of Colleges and Professional Schools, the U. S. Office of Education. With an introduction by Howard J. Savage, Secretary, the Carnegie Foundation for the Advancement of Teaching. The Carnegie Foundation for the Advancement of Teaching in Cooperation with the U. S. Office of Education, Department of the Interior. Paper. Pp. 282, with illustrations. New York: Carnegie Foundation for the Advancement of Teaching, 1933.

Among the problems that the current financial stringency has brought home to American higher education, none are more pressing than those underlying a clear understanding of the field of service that may appropriately be maintained by the individual college or university. In recent years the growth of student enrolments and the comparative ease with which funds could be secured have led institutions to increase their offerings without due regard to the possibility that at some time they might find themselves unable to maintain so expanded a service. The question whether expansion at one institution would result in unwarrantably duplicating the work of others appears to have been seldom if ever considered. The present economic situation has checked this movement sharply. Universities and colleges in increasing numbers are now asking just how they severally may best fit themselves into an adequate but economical system of higher education to serve a state, a region, and the nation.

Part I of this study describes the status of higher education in ten selected states as disclosed by the number, types and locations of institutions, methods of their control, and their curricular offerings. Selection of the particular states has been made with a view to exemplifying the variety of practices in vogue rather than on a basis of population, size or geographic

location. In describing the method of control, the authors treat public and private institutions separately. There is no attempt to appraise conditions found; the facts are allowed to speak for themselves.

The "Trend Toward Unified Control" is the title of the second study in this volume. In most of the states a multiplicity of institutions of higher learning have arisen, largely in response to local demands, and without any coordinating influence or central control. Since all of them, however, looked to their respective legislatures for support, the time was bound to come when their expanding and uncorrelated programs would be called in question. In recent years there has been a well marked trend toward the creation of a single body in each state to direct and control all of the tax supported colleges. A brief account is given of the process by which in thirteen states a central governing board has replaced the numerous independent bodies which formerly exercised the state's authority in the field of higher education.

While the several states naturally vary in their methods and policies, the general expectation is that educational opportunities for the youth of the United States should be essentially uniform. Some of the underlying factors affecting such opportunity are presented in part III. For each state are shown in tabular form the population, resources, student enrolment and revenues of public and private institutions. Also given are certain derived data, such as the estimated wealth per inhabitant from 18 to 21 years inclusive, and receipts for current expenses of public and private institutions calculated in terms of the population of 21 years and over.

From this wealth of statistical data, members of legislatures and other state officials may derive, not much comfort perhaps, but abundance of food for reflection.

La gastrophotographie. Par Pierre Bernay. Préface du Docteur Ch. Garin, professeur agrégé à la Faculté médecine de l'Hôtel-Dieu de Lyon. Paper. Price, 50 francs. Pp. 116, with 94 illustrations. Paris: Masson & Cie, 1931.

The first part of the volume deals with the development of the technic of gastrophotography by Porges and Heilpern, the special technic employed in the present investigation, precautions to be observed, and untoward reactions in the patients. Then follows a description of the appearance of the different regions of the normal stomach accessible to photography, amply illustrated. The remainder deals with the photographic appearance of the gastric mucosa in ulcerative gastritis, gastric cancer, gastritis, pernicious anemia, benign gastric tumors, gastric resections and gastro-enterostomy, all well illustrated with photographs arranged for stereoscopic vision. All photographs are attached to the pages so that they can easily be detached and placed in the stereoscope. The material is clearly presented. The monograph is modest in its claims for gastrophotography, both as to diagnosis and as to research.

Hydrotherapy in Hospitals for Mental Diseases. By Rebekah Wright, M.D., Hydrotherapeutist, Massachusetts Department of Mental Diseases. Cloth. Price, \$3. Pp. 396, with 92 illustrations. Boston: Tudor Press, Inc., 1932.

A book dealing exclusively with hydrotherapy has not been published for some years. In no other field of medicine is hydrotherapy so important as in mental diseases. Therefore there is an important place for such a book as this, and this book admirably fills this need. The book is divided into four parts. The first part considers in detail the technic of the hydropathic procedures that have proved practicable in hospitals for mental diseases. The directions are clear and concise and the illustrations are excellent. The second part is a short discussion of the training and duties of a hydrotherapist, the care of a hospital department, and the records and reports that a hydrotherapist should keep. The third part is for the physician who prescribes hydrotherapy for mental diseases. It considers the scientific basis of hydrotherapy, the effects of the various hydropathic applications, and the indications for hydrotherapy in mental diseases. The fourth part is for the superintendents of hospitals and sanatoriums for mental diseases and gives illustrations of equipment, floor plans and chapters on the construction and equipment of various hydrotherapy departments. It is a book that should be read by physicians interested in the treatment of mental diseases, studied by hydrotherapists in hospitals for mental diseases, and used for reference by superintendents of such hospitals.

Lehrbuch der Histologie und Histogenese. Von Dr. univ. med. Josef Schaffer, o. ö. Professor der Histologie an der Universität in Wien. Third edition. Cloth. Price, 20 marks. Pp. 576, with 640 illustrations. Leipzig: Wilhelm Engelmann, 1933.

A thorough presentation of subject is not often attempted in a textbook—in fact, few authors of such works know enough to do so. In this revision of his standard textbook Schaffer gives one of the few complete expositions of histogenesis and histology in the narrower sense. Unlike Maximow, he has restricted his field largely to structures that the medical student can be expected to see with the optical equipment at his disposal. There is, however, good evidence that cytologically distinct cells have different functions and that emphasis on the internal anatomy of cells is important for the development of histophysiology and pathology. The section on the organs of internal secretion, which has been largely rewritten for this edition, suffers especially from the failure to describe cell types. Aside from this, only minor criticisms can justly be made. The elimination of some sections of the second edition has made possible eighty new illustrations and numerous additions to the text, practically without increasing the size of the volume. Only a master could have written the concise and comprehensive historical introduction; its expansion is a welcome feature and should impress even a tyro. The space devoted to bone and teeth is still out of proportion to the rest, but this is perhaps justified by the author's extensive researches in the field. The clear general discussion of nervous tissues roused the hope that the new section on neuroglia might bring some order into the chaos; but this is expecting too much in the present state of our knowledge. The description of the vascular system does justice to a usually neglected field. Other valuable chapters are those on the skin, the digestive system, the placenta and the eye. The emphasis on the study of maceration preparations is also to be commended. The schemata and general theory of Schroeder have been introduced into the chapter on the female reproductive system, but various old inaccuracies still remain. The addition of a selected bibliography will be welcomed by teachers and is evidence of increasing interest in original sources among elementary students. The paper and illustrations are better than in the previous edition and the price is low for a work of such general excellence—a welcome feature in a German publication at the present time.

Gonorrhea in the Male and Female: A Book for Practitioners. By P. S. Pelouze, M.D., Associate in Urology and Assistant Genito-Urinary Surgeon of the University of Pennsylvania. Second edition. Cloth. Price, \$5.50. Pp. 440, with 92 illustrations. Philadelphia: W. B. Saunders Company, 1931.

The first edition of this work appeared under the title of "Gonococcal Urethritis in the Male" and confined its scope to this restricted phase of the subject. As many cases of gonorrheal infection in the male develop manifestations apart from the urethral inflammation, the omission of a discussion of the complications and remote manifestations of the disease was a serious drawback. However, the present volume covers in an able manner, in excellent arrangement, the subject of gonorrhea; and while one may not agree with certain of the deductions of the author noted throughout the volume, his insistence on the "utmost gentleness in the treatment of gonorrhea" is most heartily concurred in. The author gives the results of careful observation and extensive experience with a disease which up to the present time has generally been poorly treated. The recommendations for treatment in the various phases of the infection, both in the male and in the female, leave little to be desired, at the present state of knowledge.

Chemical Wave Transmission in Nerve. By A. V. Hill, F.R.S., Foulerton Research Professor of the Royal Society. Based on the Liversidge Lecture delivered at Cambridge on 13 May 1932. Cloth, \$1.25. Pp. 74, with 13 illustrations. New York: Macmillan Company; Cambridge, Eng.: University Press, 1932.

Dr. Hill provides a brief but clear, readable and authentic summary of what is now known concerning chemical and physical changes in nervous tissues induced by activity in the nerve cells and their processes. The monograph, being a lecture before British chemists, is primarily directed to laymen in biology, including chemists; but so many new and important facts in the field of nervous physiology have been established in the last few years that most physicians who graduated more than ten years ago can read it with profit.

Medicolegal

Malpractice: Failure to Use X-Rays.—The defendant treated the patient's arm, Dec. 3, 1930. He found a dislocated wrist and a lacerated wound on the back of the hand. The wound was treated, antitetanus serum administered, the dislocation reduced, and the arm put into an aluminum splint. The splint fitted the lower part of the hand and forearm only. On the following day a roentgenogram was made, but it was not made for the purpose of detecting a fracture and it did not disclose a then existing fracture of the radius. Two days after the accident, the defendant-physician assured his patient that no bones were broken, although, according to the patient's statement, the patient called his attention to a "scraping of the bones." The patient continued to have trouble with his arm, and on January 27 he returned to the defendant for further treatment. A roentgenogram then made showed a fracture of the radius, badly united. Two operations followed, but they left the radius so crooked as to make permanent the dislocation at the wrist and impairment of the arm. The patient brought suit, the trial judge directed a verdict for the defendant-physician, and the patient appealed to the Supreme Court of Wisconsin.

Expert testimony showed that the x-rays were customarily used by physicians in the vicinity where this case was treated, to diagnose fractures and to keep a check on the progress of the healing. The defendant-physician had x-ray apparatus and a fluoroscope in his office. The court concluded that under such circumstances the jury was entitled to believe that a proper discharge of the defendant's obligation required a more frequent and timely use of the x-rays than was made. Evidence was offered to show, too, that in treating a fracture of the radius it was customary to immobilize an arm both at the elbow and at the wrist and that the splint used by the defendant in this case was too short to effect such immobilization. There was therefore sufficient evidence, in the opinion of the court, to carry the case to the jury on the question of the defendant's negligent diagnosis and treatment. To prove that the defendant's failure properly to diagnose and treat the fracture had injured his patient, it was shown that the sooner a fracture is discovered and dealt with, the better the result usually obtained; that good results ordinarily follow proper treatment, and that the result in the present case was consistent with negligent diagnosis and treatment. The fact that open reductions of fractures are often necessary, and angulation and bowing of bones may result in the absence of negligence, as shown by the evidence in this case, did not leave the jury to speculate as to the causation of the patient's condition, since a finding can rest on a preponderance of probabilities. The judgment of the trial court was reversed and the cause remanded for a new trial.—*Schwartz v. Zellmer (Wis.)*, 245 N. W. 585.

Administration of Drugs by Iowa Osteopaths Unlawful.—A licensed osteopath prescribed for a patient a mixture of sodium bicarbonate, bismuth subcarbonate and magnesium oxide, to be taken internally. The state of Iowa, through its proper officers, contended that this was the practice of medicine and instituted proceedings to enjoin the osteopath from engaging in such practice without a license so to do. The court issued an injunction and the defendant osteopath appealed to the Supreme Court of Iowa.

The osteopathic practice act of Iowa (section 2554, Iowa Code, 1931) provides that a license to practice osteopathy or osteopathy and surgery shall not authorize the licensee to prescribe or give internal curative medicines. This, the defendant contended, authorizes a licensed osteopath to prescribe and give internal medicines that are not curative. The medicines prescribed in this case, she claimed, were prescribed, not to effect a cure, but to relieve distress. She argued that she had a right to prescribe them and should not be enjoined from doing so. The Iowa statutes do not define the words "internal curative medicine." The Supreme Court of Iowa, however, in *State v. Gibson*, 199 Iowa 177, 201 N. W. 590, declared that those words are not to be given a technical meaning but are to be construed in their usual and ordinary sense. Under that rule of construction it would seem that the legislature intended by this phrase to embrace more medicines than those technically known as specifics.

Moreover, when it is remembered that osteopaths do not deeply study pharmacology or materia medica, it seems hardly possible that the legislature intended to confer on them the right to prescribe or give all internal medicines except specifics. When the defendant used in the treatment of her patient the internal curative medicines that she prescribed, she practiced medicine. If an osteopath practices medicine without a license to do so he is subject to a penalty and in addition may be enjoined from practicing medicine without a license. A license to practice osteopathy is not a license to practice medicine. The license of an osteopath does not authorize him to go beyond the boundaries of his own calling and engage in another for which a different license is required. The injunction restraining the defendant from practicing medicine was affirmed.—*State v. Stoddard (Iowa)*, 245 N. W. 273.

Contracts: Limitation of Area of Practice; "Within Radius of Fifteen Miles" Construed.—The defendant, a licensed physician, practiced in the borough of Boswell, Pa. On March 2, 1928, he agreed to sell to the plaintiff, also a licensed physician, his house, office equipment, surgical instruments, and the good will of his practice, and to refrain from practicing "within the radius of fifteen miles from the borough of Boswell," for fifteen years after the date of the agreement. About Oct. 1, 1929, he opened an office in Johnstown, Pa. The distance between the plaintiff's office in Boswell, which he had purchased from the defendant, and the defendant's newly opened office in Johnstown, was 12.2 miles in an air-line. The plaintiff therefore entered suit to restrain the defendant from violating the terms of his contract. The trial court construed the words "within the radius of fifteen miles" to mean within fifteen miles computed, not by air-line, but by the nearest traveled way, and because the distance between the two offices computed in that way was 15.4 miles, the court dismissed the suit. The plaintiff appealed to the Supreme Court of Pennsylvania.

The meaning of the words used to define the area from which the defendant agreed to withdraw from practice, said the Supreme Court, is plain, unambiguous, and definitive. If the defendant intended when he sold his practice in Boswell to describe a district irregular in shape, its boundaries to be dependent on accessibility by public roads, he should have said so. The boundaries of such an area would necessarily have elements of uncertainty, for there might be dispute about which of several public roads was the nearest traveled public way. The court has no power to substitute for the words "a radius of fifteen miles," the words "fifteen miles by the nearest traveled public way or road," for the context of the agreement and the circumstances of the case exclude such substitution.

The case was remitted to the court below, with instructions to restrain the defendant from further violation of his contract.—*Johnson v. McIntyre (Pa.)*, 163 A. 290.

Bone Tumor Attributed to Trauma.—On or about Jan. 6, 1931, the plaintiff was loading a gas shovel on to a flat car. A plank that he was using to tighten a cable slipped, and the plank swung around and struck him. He was thrown from the car to the ground, striking his left hip and his abdomen. The defendant's physician, who treated him at the time, found a fracture of some ribs on the right side and injuries to a kidney and the stomach. After a time the plaintiff returned to work. In the latter part of April he had a severe pain in his back and in his left leg. He continued at work until August 27, when the trouble with his back and leg compelled him to desist. Roentgenograms showed a bone tumor, the exact location of which the published record does not disclose. In a suit arising under the workmen's compensation act of Nebraska, the physician who treated the plaintiff testified that the history of bone tumors shows in most cases that they arise from trauma and that it was generally agreed by all bone authorities that such a condition was usually the result of trauma. This opinion was concurred in by the physician by whom the roentgenograms were taken and by another. On behalf of the defendant, testimony was offered to show that trauma does not cause a tumor, although one physician testified that if there were signs of external violence and if the plaintiff had black and blue marks at the time of the injury, he would say that a trauma was the cause of his condition. From an examination of all the evidence, said the Supreme Court of

Nebraska, before which the case had come on appeal, we conclude that there is ample testimony showing that the tumor is a direct result of the injury suffered by the plaintiff.—*Stone v. Thomson Co. (Neb.)*, 245 N. W. 600.

"Good Health" Defined.—On March 12, 1928, the plaintiff went to St. Louis, Mich., where he took baths and consulted a physician. He was up and about, going to shows, circuses, etc. The physician who attended him testified that the ailment from which his patient was suffering was temporary, not serious, and that the patient left fully recovered. On March 16, 1928, the defendant delivered to the plaintiff a policy of insurance against sickness, which provided that the insurance was not to be in force unless the policy was delivered while the insured was in good health. On or about May 2, 1928, the plaintiff entered on a protracted period of sickness. This suit was to recover from the insurer the benefits to which the plaintiff claimed he was entitled under his policy by reason of that sickness. The defendant insurer denied liability, on the ground that the plaintiff was not in good health when the policy was delivered. The trial judge instructed the jury that "good health" means that a person "is free from disease that would seriously affect the general soundness of the system, and that he has not been attended by a physician for a serious ailment," and the jury rendered the verdict in favor of the plaintiff. The defendant insurer appealed to the Supreme Court of Michigan. The evidence of the plaintiff himself and of the physician who was attending him when the policy was delivered, that the plaintiff's ailment was temporary and not serious, gives support to the finding of the jury that the plaintiff, despite the ailment, was in good health at the time of delivery. The verdict therefore, said the Supreme Court, must be sustained. That it is against the great weight of the evidence was a question not presented on the appeal.—*Ligrow v. Abraham Lincoln Life Ins. Co. (Mich.)*, 245 N. W. 498.

City Liable for Typhoid Fever Contracted Through Public Water Supply.—The city of Helena, Montana, furnishes water to its inhabitants. The plaintiff contracted typhoid fever through water so supplied and sued the city to recover damages. The district court dismissed the action and the plaintiff appealed to the Supreme Court of Montana. The city contended that in furnishing water it acted in its governmental capacity and therefore was not liable and that in any event the laws that created a state board of health and county and city health departments deprived the city of its control of its water supply and relieved the city of responsibility. The city of Helena, in engaging in this type of activity, said the Supreme Court, stands on the same footing as a private individual or a business corporation similarly situated. The activities of the city in supplying water for domestic purposes, for pay, carry with them the duty to exercise care commensurate with the risk involved and to see that the water that it supplies is free from filth and germs that will affect the health of consumers. To allege that health officers have been negligent is no defense to a charge that the city knowingly delivered polluted water. The action of the district court dismissing the case was reversed and the cause remanded for further procedures.—*Campbell v. City of Helena (Mont.)*, 16 P. (2d) 1.

Evidence: Bias of Expert Witness May be Shown.—It does not constitute prejudicial error for counsel to bring out on cross-examination the fact that a physician testifying as an expert witness is a regular examiner for the insurance company in whose behalf he is testifying and that he is paid by the insurance company. Such evidence bears on the bias, credibility and interest of the witness. Cross-examination of this character, however, in the opinion of the Supreme Court of Idaho, should be carefully controlled by the trial court.—*Curtis v. Ficken (Idaho)*, 16 P. (2d) 977.

Workmen's Compensation Acts: Refusal to Undergo Fourth Major Operation.—Where an employee has undergone three major operations, his refusal to undergo another, the beneficial results of which are in doubt, does not constitute such unreasonableness as to preclude his right to compensation under the workmen's compensation act of Utah.—*Standard Coal Company v. Industrial Commission of Utah (Utah)*, 16 P. (2d) 926.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.
Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.
Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.
Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hariman, 999 Sutter Street, San Francisco, Secretary.

SOCIETY FOR THE PREVENTION OF ASPHYXIAL DEATH

New York State Conference on Problems Relating to Death from Asphyxiation, held in New York, May 24, 1933

The President, PALUEL J. FLAGG, M.D., New York, in the Chair

Infant Deaths, with Special Reference to Asphyxia

DR. SHIRLEY W. WYNNE, New York: The infant mortality rate achieved in this city last year was almost down to 50 per thousand births, a rate that would have been thought impossible of attainment a generation ago. However, this low rate represented the death of 5,594 infants, and it is well to inquire whether many of these deaths could not have been prevented. During the past generation most of the reduction in the infant mortality rate has occurred in diseases of the digestive system; also some in the death rate charged to the pneumonias and to the infectious diseases. There has been little change in the rate charged to premature birth, injury at birth and other diseases peculiar to early infancy. Our great problem now in infant mortality is the reduction in neonatal deaths; i. e., the deaths which occur in the first few days of life. Of the infant deaths in New York City from 1929 to 1931, inclusive, nearly 24 per cent occurred in the first day of life; over 38 per cent occurred during the first week, and more than half of all infant deaths occurred in the first month.

It is clear that the activities carried on by the department of health can have little effect on about 40 per cent of the infant deaths, and I do not see how the pediatricians can contribute very much more. The great loss of infant lives occurs before the pediatrician has charge of the infants. The organized medical profession should face the facts brought out in this analysis and take steps to reduce what I consider to be still a considerable proportion of preventable deaths. Could not a considerable proportion of the deaths charged to atelectasis and asphyxia neonatorum be prevented by proper treatment? This, and other questions which a study of the causes of death during and immediately following childbirth would suggest, deserve careful attention. The problem of preventing deaths from atelectasis, asphyxia neonatorum and aspiration pneumonia might well be studied by this newly organized society. The department of health welcomes every effort which holds out the promise of reducing our mortality rates.

The Society for the Prevention of Asphyxial Death has suggested that the geographic location of areas in the city with excessive infant mortality rates would be of service, with a possible view of locating a future ambulance service. In Manhattan the "sore spots" for infant mortality are the central Harlem health center district, with a rate of 97 as against 72 for the borough as a whole, the Lower West Side, with a rate of 80, and East Harlem, with 77. However, in some of these districts there are so-called health areas in which the rates are considerably higher. Thus, in central Harlem there are two areas with rates of 121 and 119, respectively. An area on the Lower West Side has a rate of 107 and one in Kips Bay-Lenox Hill a rate of 104. Similar tabulations are available

for the entire city and will gladly be placed at the disposal of the society. It may be that the first efforts to reduce infant deaths caused by asphyxia should begin in these "sore spots."

DISCUSSION

DR. HAVEN EMERSON, New York: Every new movement dealing with the extent and quality of deaths reveals an inadequacy of fundamental information. The very development of this movement calls attention to the fact that two fundamentals are lacking on which social intelligence, en masse action or governmental action can be taken. One is the necessity for current reporting of all cases of sickness that come into the hands of institutions or medical agencies, or, it is to be hoped, ultimately into the hands of individual physicians. I should like to use the terms that are proposed by the biologists in discussing cellular survival. Death may be considered an irreversible process. But death by drowning at a certain point is a reversible process. So, in all these categories of deaths, those are being discussed which are reversible by means of technics now available, those which are really postponable, and those which are inevitable. The postponable deaths are those which occur in the course of poliomyelitis. It is not uncommon in an epidemic of poliomyelitis to find a person suffering from respiratory paralysis which is not necessarily of a permanent kind. If these patients are relieved for a period while the congested stages of the lesions in the spinal cord and bulb are recovered from, they may recover and carry on a reasonable normal life afterward. But if the damage is of a structural and permanent kind, affecting the anterior horn cell, a postponement of death may be effected by means of artificial respiration, but no recovery. So the approach to this problem demands that potential deaths be looked at from various points of view. I have fixed in my mind what is certainly a sharp impression in that of almost any young physician: the first instance in which a baby fails to start breathing because of conditions that have preceded in the length of the confinement, and finding oneself with all the usual physiologic resources uneffective simply for the lack of what is now available in artificial external negative pressure applied to the thorax. Dr. Wynne's analysis is clear in defining that fraction of all deaths under 1 year that may conceivably be preventable by appropriate technics at the time of birth or within the first few hours, or even within a day or two of birth. He estimated that there might be 400 lives saved a year in this city from deaths from asphyctic origin occurring in little children. This is twice as many as that now occurring annually from diphtheria, showing the expense quite properly incurred because of the knowledge in the matter of preventing those 200 deaths from diphtheria each year. A little intelligent organization, a knowledge of the resources, will achieve as much quantitatively in the saving of life from this group of deaths as it will in diphtheria. Physicians are sensitized, as it were, to the moral responsibility to remove diphtheria. We sort of feel that the death of an infant from asphyxia is an unavoidable accident, something unpreventable, unforeseeable. We have got to give up that attitude and determine the sources that are now available through the teaching of physiology, through the ingenuity of chemists, physicists, and mechanics, which can be brought to bear at the time and place where these deaths may be expected. There are only two problems of preventive medicine: One is a knowledge of the expected prevalence, the location, the distribution, the time and place and age occurrence of a disease that we think is preventable. The second one is the specific employment of preventive resources. We are further along in the analysis of the specific means of prevention than we are in a knowledge of the distribution or prevalence of these conditions. The state department of health can require that no laboratory offering diagnostic service should be without certain facilities for diagnostic aids in infectious diseases, that their technics must be of a certain quality, and that they must have personnel of a certain skill. An attempt to translate that theory into the operation of hospitals I believe would do damage at this stage, which is the experimental stage. Physicians do not know just what instruments or skills or materials are going to be always necessary. It is rather for us, through such a society as this, to make it common for institutions to have certain minimum essential conveniences with which to meet what are frequent emergencies. It can be

stated that for every 10,000 patients in a year there are going to be a certain number with an asphyctic emergency, and to meet those it would be suggested that this and that kind of equipment be provided. The final stage in any movement such as this is initiating will be expressed when the actuaries, the underwriters, the financially interested concerns attempt to express as a fixed human hazard these forms of accidental death as a basis of insurance. The insurance companies, quite aware of these deaths, have lost the significance of them because the international list of causes of death has been bent on etiologic factors and anatomic types of causes of death rather than having from all different categories a particular form of death assembled under one title. There is no such thing as the vital statistics of asphyxial deaths in the United States now.

Medical Examiners' Findings Relative to Asphyxial Death

DR. HARRISON S. MARTLAND, Newark, N. J.: [This paper consisted largely of references to colored lantern slides.]

DISCUSSION

DR. THOMAS A. GONZALES, New York: In regard to the strangulation cases presented by Dr. Martland, I have found that, in a series of about fifty cases of asphyxia due to ligature, suicidal deaths, in most instances there is little change in the internal tissues of the neck. That is ordinarily described in books as hemorrhage, tears and so forth of the inner number of thoracic arteries and various other ligaments. The striking feature of these cases is the strangulation mark on the skin of the neck. This is probably because in most suicides the body drops a short distance in contradistinction to legal executions, in which the body may drop 6 or 8 feet, with considerable trauma to the neck, even resulting sometimes in a fracture. In some strangulation cases, the marks on the neck are slight or absent, especially when soft material has been used in the strangulation. Among the fatalities in which there is difficulty in making a diagnosis are those due to general and local anesthesia and exposures to noxious gases in certain industries. With the possible exception of chloroform, which usually is easily extracted from the tissues, I have had difficulty in recovering the drug which is used in the anesthesia; in fact, repeated chemical analyses have been futile in this respect, and in all types of anesthesia, local and general. There has been no difficulty in recovering cocaine in suicidal deaths. In anesthesia there is a small quantity used, and in suicides generally large quantities are used. There is another factor perhaps in the cases in which the dosage is small: the drug splits up in the body rather quickly. Other conditions are often looked for to explain these deaths, such as status lymphaticus and, in older people, cardiac lesions and lesions in other organs. The clinical symptoms of these cases are often misleading. A man had an ulcerated bleeding carcinoma of the urinary bladder. Following spinal anesthesia, air was injected into the bladder for the period of the operation, and he died in a few minutes. The case was thought to be an anesthetic death because quite a number of spinal anesthetic deaths occur. The autopsy revealed air in the venous sinus. My opinion was that air entered in the dilated venous sinus in the ulcerated wound. There was frothy blood in the right heart. The blood vessels around the bladder were filled with air. In New York City in a year there are between 300 and 400 cases of accidents by carbon monoxide poisoning, without any relation to suicide. A great majority are from illuminating gas. A small percentage are from coal gas. Another small percentage are from the exhaust gases from combustion engines. In some carbon monoxide poisonings, the late effects are extremely interesting. Exposure to a massive dose or exposure to a repeated small dose may produce symptoms that are very important. These persons have headaches, a sense of constriction about the head, vertigo, dizziness, tremors and apathy, and they are stuporous at times. In the massive exposures there often occur cases ending in death; but when these patients come out of the carbon monoxide they have tremor and a mask-like face closely resembling the face of Parkinson's disease. Most of the accidental gas cases can be prevented. Most of them are due to carelessness. An educational program like the one the Society for the Prevention of Asphyxial Death is trying to put forward is of great importance. The

society should also back legislation to prevent the use of defective fixtures, which are the responsibility of the owner of the house and not of the gas company. I have seen many instances in which carbon monoxide poisoning could have been prevented if the fixtures had been taken care of.

The Economic Aspect of Asphyxial Death

ALBERT W. WHITNEY, New York: I understand death from asphyxiation to mean any death from any cause whatsoever in which life might possibly have been saved if artificial respiration could have been induced; in other words, cases in which the proximate cause of death is inability to breathe.

A distinction will have to be drawn between cases in which prevention of death is theoretically possible and cases in which it is practically possible. All deaths by drowning are evidently due to asphyxiation, the word being used in this sense, but there are only a part of such deaths in which aid can be got to the drowning person; in a large number of cases the body is not even recovered. Evidently the most valuable statistical study will be one that undertakes to present the number of cases of asphyxiation in which it would have been physically possible to furnish aid that might have saved the life. It is very difficult to get statistical data bearing on this subject. Dr. Murphy, chief statistician for vital statistics of the Bureau of the Census, has been kind enough to furnish me what statistics he has, but this material deals only with the first part of the subject and is even then inadequate. One readily realizes what a difficult thing it is. One encounters all kinds of points of view. One point of view of the value of the human life might be the wealth produced, divided by the lives, or something like that. But the point is that it is a decidedly moot question and can be looked at from many points of view. One extreme point of view would be what the insurance company has to pay in a damage suit. That, of course, is based on what a jury thinks a life is worth.

There is no way to deal with the second part of the problem except by the use of judgment. Dr. Flagg's estimates for the city of New York are as follows: general asphyxia, 934; stillbirth, 946; atelectasis, 336; pulmonary complication, 158; premature birth, 426; total, 2,800. Taking the population of New York City to be 7,000,000 and the population of the United States to be 126,000,000, that would mean that these figures would have to be multiplied by 18 to get the approximate figure; that is, 50,400 for the United States as a whole. These figures for stillbirths, atelectasis and premature birth seem to me high. I have no figures for pulmonary complication.

The economic value of a human life is a moot question. The book by Dublin and Lotka entitled "The Money Value of a Man" gives the present worth (at a discount rate of 4.5 per cent per annum) of net future earnings (that is, earnings less living expenses) for an income class of \$1,000 a year at \$750 for age 0 and \$9,400 for age 30. Dublin and Lotka actuarially compute the value of the future earnings of a new-born baby at \$1,000 a year. This of course includes the probability of death at these various ages. If one computes that on an actuarial basis and takes out of that each year the living expenses, one finds on that basis, at a discount rate of 4.5 per cent, assuming ordinary mortality, that the value of a baby's life is \$750. In other words, the probable value of the difference between the earnings and the living expense for a baby that was just born would be \$750. For a man aged 30, it would be \$9,400. I am not saying that this is the proper figure. Of course many of the people that are drowned are not wage earners. It is assumed that these figures are applicable to the present case, the economic value of these 50,400 lives will be \$207,824,400.

DISCUSSION

LEON SENIOR, New York: Since Mr. Whitney's speculations on the economic value of human life are nothing more than speculations, I shall not take issue with him. I will confine myself to a subject with which I am familiar, workmen's compensation insurance. Institutions that insure the obligations of the employer for loss due to work accidents are interested in methods of prevention and in the restoration of the worker to life and health. Education is the foremost method in accident prevention. Insurance carriers hold to the doctrine that all accidents are preventable through education and proper supervision. The state labor department is one of the agencies for

establishing rules as a basis for education. In dealing with the subject of accidents due to asphyxiation, the Industrial Code provides the following rule:

Rule 741. All dust, fumes, vapors, gases, fibers, fogs, mists, or other atmospheric impurities that are emitted or created in quantities tending to injure the health of employees in or in connection with any process of manufacture which involves the formation or use of substances . . . that can be detected by a recognized standard method of chemical analysis shall be removed by means of suction devices as far as practicable at their point of origin.

Carbon monoxide, chlorine and cyanogen compounds are among the harmful substances which produce injuries unless proper precautions are taken against asphyxiation. Rule 724 of the industrial code provides that

Every workroom in which carbon monoxide is emitted or created in or in connection with any process of manufacture shall be provided with such ventilation that the carbon monoxide shall not exceed two parts in ten thousand volumes of air in any occupied part of such workroom.

For the calendar year 1931 the New York Labor Department showed 122 cases of compensated accidents due to gases. These 122 cases resulted in 28 deaths and 94 temporary disabilities, costing the insurance carriers and consequently the employers \$184,000. Carbon monoxide and dioxide was the cause of 51 cases, of which 3 were deaths; illuminating gas caused 32 accidents; hydrocyanic acid resulted in 4 cases, of which 1 was fatal. Electrical shock, if classed as causing asphyxial death, shows 647 cases in one year, of which 60 were death and permanent disability, and 530 temporary disability, with a total cost of \$555,853. Gas explosions produced 131 cases, of which 5 were deaths and 108 temporary disability at a cost of \$56,255. In the mines, black damp is formed by the combustion of nitrogen and carbon dioxide. Fire damp is formed by an explosive gas called methane. Acetylene mixed with air becomes an asphyxial hazard dangerous to industry. Blast furnace gas contains from 24 to 30 per cent of carbon dioxide. The extraction of gold from ore requires the use of chemical salts which, when in contact with air, form the deadly asphyxiant hydrocyanic acid.

I have encountered numerous cases of preventable losses due to asphyxia. About four years ago two men were killed in a plant located at Corlears and Water streets, New York. All employees had been warned to vacate the plant on Saturday afternoon, at which time it was to be fumigated by the releasing of cyanogen gas on the premises. Two of the workmen either neglected to comply or forgot the warning and went to the basement to sleep. Both were found dead on the following Monday after the factory had been cleared of gas. A thorough inspection of the premises might have saved the lives of these two men. In another plant in New York, an employee last winter, while admitting chlorine gas into a tumbler of starch in order to bleach it, loosened the coupling that closed the chlorine gas container. He was overcome, was rushed to a hospital, and died of asphyxiation. The accident might have been prevented if the employee had been thoroughly educated in the danger of his occupation. The newspapers, May 22, carried the news of a catastrophe in Newark, N. J., in which five men lost their lives in a gas pit of the tannery. A review of the case leaves one astonished at the contempt for the danger shown by the workmen and the firemen who attempted rescue efforts.

Prevention measures lie partly in the field of safety engineering and partly in the field of medicine. Industrial safety engineers have given much time to the study of accident prevention and to educational work. The time has come for the medical profession to undertake the second part of the problem; namely, the study of methods for restoring the injured after the occurrence of the accident. There is an economic aspect of huge importance to saving lives of men in industry, most of whom have dependents who have no other resources than the wage earned by the workman. Workmen's compensation is but a poor substitute for that wage, and yet workmen's compensation in this country represents a cost of at least \$150,000,000 per annum. This cost paid for insuring compensation benefits under the laws of our several states is the economic contribution, the economic loss, if you please, paid by society for work accidents, many of which are preventable. This economic loss takes no account of the physical and mental suffering, of broken homes, of injured workmen, of widowed mothers and orphaned children. Society has become, so to speak, acclimated to these results of industry using deadly

implements to accomplish its purpose to the point at which most persons accept the situation as beyond repair. It is the duty of technicians in public economy and in safety engineering and of physicians to arouse the public conscience, to dramatize the facts, and to encourage the men and the organizations that seek by research and study to reduce the social and economic loss resulting from the use of dangerous implements or substances in industry.

Modern Methods of Resuscitation in New York City

DR. DANIEL J. DONOVAN, New York: The police department of New York City, in discharging its primary function of safeguarding life, is constantly confronted by the three great emergencies of death by drowning, by gas poisoning and by electrical shock. The city of New York, with its heterogeneous mass, comprising twenty or thirty nationalities, is recognized as the largest asphyxiation ground in the world. Here it is that derelicts on the sea of life come from the four corners of the earth in a last desperate attempt to repair the ravages of fate and, failing, seek a painless path to eternity by means of gas poisoning or drowning. Here it is that from among the thousands who go in bathing during the torrid months of the year, many are rescued from the water only to die on beaches, docks and waterfronts because of the widespread lack of knowledge of how to apply artificial respiration. Deaths occasioned by drowning, gas poisoning and electrical shock approximate 12,000 in the United States annually. It is estimated that between 40,000 and 50,000 cases are successfully treated by the application of artificial respiration measures. When an unfortunate is rescued from the river or surf or is found inert in a gas-filled room or has been apparently shocked to death by contact with a live wire, the fact that he has ceased to breathe is not in itself an indication that death has taken place. There are records of submersion from eighteen to twenty minutes, after which the victims went on to complete recovery. However, it is probable that after from twelve to fifteen minutes' submersion recovery will be very unlikely. We all know we can hold our breath and the heart continues to beat. A very determined individual could probably hold his breath until he lost consciousness, but then he would breathe again and would soon be as well as ever.

If a person is submerged in water or if anything stops breathing, how long will the heart continue to beat? That is the time in which to start artificial respiration if recovery is to be effected. The nearer to the moment that breathing has ceased artificial breathing is instituted, the greater are the chances of success. If one is to treat successfully a person critically overcome by submersion, by gas poisoning or by electrical shock, one does so by substituting an artificial method of breathing for the natural one.

About fourteen years ago I became interested in the subject of artificial respiration. The problem, as I saw it, was how to equip as great a portion of the general public as possible with the knowledge necessary to act effectively when confronted with the emergencies of drowning, gas poisoning and electrical shock. It appeared to me that the teaching of artificial respiration should be made an integral part of the training of future police officers in the recruits' training school, as, aside from the direct effect of making these officers potential salvagers of human life, their demonstrations of the efficacy of artificial respiration when confronted with impending tragedy in the field of their daily duties would serve as a means of arousing the citywide interest of the public. About ten years ago I caused to be inserted in the curriculum a course of training in the Schäfer prone pressure method of artificial respiration. During their three months at the recruits' training school, every future police officer of New York City is thoroughly taught to apply this treatment.

In cases of gas poisoning, artificial respiration is supplemented by the use of a special apparatus known as the inhalator. The use of this apparatus does not supplant the application of artificial respiration but is used in conjunction with it. Carbon monoxide kills by altering the blood so that oxygen cannot be gathered by the blood in the lungs and carried throughout the body. When the blood has gathered carbon monoxide, it will lose it if the patient is placed in fresh air and breathes fairly well. It has been found that carbon monoxide will leave the body more rapidly if pure oxygen is

breathed instead of air, which is only one-fifth oxygen. Accordingly, gas victims are given oxygen by means of the special apparatus known as the inhalator, which consists of tanks containing 93 per cent oxygen and 7 per cent carbon dioxide. The latter stimulates breathing considerably and causes a patient to take larger breaths and more of them. The increased vigor of breathing brings in more oxygen and replaces the carbon monoxide with greater rapidity.

In 1925 the police department inaugurated its present emergency truck system, enabling me to put the inhalator to practical use. Police emergency trucks are high powered motor cars, built on the order of fire patrol trucks. A crew of twenty-one men is assigned to each, divided into three squads, and are on duty twenty-four hours daily in eight hour shifts. They are used only in emergencies, such as explosions, railroad disasters, fires and occurrences of lesser magnitude, such as a gas poisoning case in which emergency treatment is essential. At present there are twenty police emergency trucks on constant duty. Each truck is equipped with an inhalator and every member of the crews is adept in the use of the inhalator and the application of the Schäfer prone pressure method of artificial respiration. The records on file in the chief surgeon's office at police headquarters bear eloquent testimony to the efficacy of artificial respiration in cases of drowning, gas poisoning and electrical shock, and the supplementary use of the inhalator in gas poisoning emergencies.

Fundamentals of Peroral Endoscopy (Laryngoscopy)

DR. CHEVALIER JACKSON, Philadelphia: The easiest way to present the fundamentals will be by means of lantern slides. Twenty years ago, Yandell Henderson had not said in making his discoveries that carbon dioxide must be given in conjunction with oxygen. It was thought that the carbon dioxide was acting somewhat in the manner in which carbon monoxide is now known to act. Carbon dioxide was thought to be toxic. Twenty years ago the oxygen tank was without any carbon dioxide because nothing was known about that. An oxygen tank is connected up by means of a pipe, the bronchoscope insufflating oxygen directly into the lung. Before insufflation, the secretion is taken out by negative pressure, by aspiration. Bronchoscopy for asphyxia is not done outside the bronchoscopic clinic. My associates and I never do a bronchoscopy without having the oxygen tank beside the table, because asphyxia is one of the emergencies we must always be prepared to encounter. We encounter asphyxia 500 times to the once that we have any trouble with the artery circulation. When we have a patient with normal asphyxia, in order to get a straightened rigid tube around all the corners, running around the corners back of the tongue and then into the larynx, we have four different angles to turn. In order that the straightened rigid tube, the bronchoscope, may be introduced, the patient must be in a certain position. His head must be elevated so as to bring the trachea in line with the operator's eye, provided the patient is not asphyxiated. When a patient is asphyxiated, he is as limp as a rag. With an instrument one can look directly down into the trachea without any resistance on the part of the patient, because he is completely relaxed. One thing about asphyxia is complete and absolute relaxation after respiration has stopped. We are careful to lift the patient's upper lip to put it out of the way. The directoscope is put in, and by a lifting motion the curves are obliterated. The cross-section of the head of a man who was asphyxiated with suicidal intent shows the crowding back of the tissues. In a patient asphyxiated from suicidal intent, everything is crowded back against the back wall and the larynx is completely obliterated.

Supposing that man is cut down before his heart has stopped. We put in a laryngoscope, lift up on it, pull away, pull all of these tissues that have been crowded back by the rope; we lift those away to clear that area. In nearly all anesthetics there is a dropping back of the tongue and all the tissues. It is to clear this airway that Dr. Flagg devised a laryngoscope available for general use for the prevention of asphyxia. It has prevented thousands from passing away under anesthesia by clearing the airway. This instrument is not used to pry on the upper teeth. It is a lifting motion. The whole head is lifted off the table in order to clear this area. The operator can look straight into the windpipe, put in an aspirating tube

and clear out the obstructing mucus. He is then ready for the insufflation of the oxygen with its 5 to 10 per cent of carbon dioxide.

There is no use trying to force in oxygen and carbon dioxide when the larynx is plugged up. This drives the plug in tighter. The only way one can determine whether or not there is any obstruction is to look and see. One looks in the mouth but can't see down to the larynx unless the tongue is displaced with the direct laryngoscope.

A bronchoscopic operating room is prepared to deal with obstructions in the air and food passages and to deal with every emergency and every problem that can arise. It is adapted for the relief of asphyxia in patients who can be brought in. Practically none of the patients whose deaths Dr. Donovan cited could be taken to a bronchoscopic clinic in time to save their lives. To save those lives, something a great deal better mobilized than a bronchoscopic clinic must be available. There must be some sort of ambulance service that can get promptly to the patient and that can be equipped not only with the small instrumentarium required, but with men trained in its use. That is an absolute necessity.

A patient who is asphyxiating from any obstruction above the level of the clavicles gives unmistakable signs of what is the matter with him. At every inspiration his chest sinks in. There is a sinking in at the suprasternal notch. On expiration those depressions fill out. The patient takes another inspiration and again this sinking in occurs. The patient is becoming asphyxiated from an obstructive larynx dyspnea. It does not occur in asthma, in cardiac dyspnea, in any form of dyspnea but the obstructive larynx dyspnea, which is the most common of all forms of surgical dyspnea. I am not speaking now of gas accidents in asphyxia or of the industrial accidents.

Here is the other symptom: He is restless. He is working so hard to pump in air that he doesn't want to be bothered. He doesn't want to take food. He just wants to be let alone. He is putting in all his time to pull in air, because there is a sinking of the suprasternal notch. That is a typical picture of asphyxia from an obstructive larynx dyspnea. After the breathing is stopped, one will have to get it started again.

DISCUSSION

DR. CHARLES J. IMPERATORI, New York: I agree with the method that Professor Jackson has presented. This method of Dr. Flagg's represents an emergency station in contradistinction to bronchoscopic clinics that are the repair shops. With regard to trauma and other objections that have been raised to this method, I can positively say that there are no traumas that will ensue provided the individual doing the laryngoscopy and the intubation has been given sufficient instruction and has sufficient intelligence. Any method, no matter how simple, can be made, one might say, a destructive method if the individual using it does not use his intelligence. The objections that have been raised at times that the intubation of the larynx will produce a paralysis of the cords and a stretching of the cords so that it will interfere with the voice eventually, and so on, are not to be considered, since this is a life-saving procedure. What is done by this method of Dr. Flagg's is, as it were, to extend the trachea and bronchi out beyond the mouth and beyond this danger zone, which has been described by Professor Jackson. And then, by the insufflation or the introduction of oxygen, the needed air or needed oxygen is supplied to the individual, plus this method of gas therapy. Gas therapy is not a new thing. It has been used for a long time. But with this method of Dr. Flagg's he has made it easy for those who are not continuously doing these bronchoscopic procedures. Formerly oxygen was used simply in the way of a mask or a tube and the patient's mouth and face were sprayed with the oxygen. But if the tongue had dropped back into the mouth and there was a great deal of secretion, even though the tongue was not pulled forward, frequently there would not be enough pressure to get the oxygen down into the trachea. These instruments that have been devised by Dr. Flagg are of great importance. There are certain things that must not be forgotten. There is still the operation of tracheotomy, which may be necessary following this procedure. I know it is not Dr. Flagg's idea that this is to supplant tracheotomies when they are necessary. This is entirely an emergency measure.

Fundamentals of Asphyxia

YANDELL HENDERSON, PH.D., New Haven, Conn.: This article appears in full in this issue of THE JOURNAL, page 261.

DISCUSSION

DAYTON J. EDWARDS, PH.D., New York: The primary disturbance in asphyxia is a reduction in the quantity of oxygen supplied to the tissue cells. Although oxygen is indispensable to the life of the cells, an excess of this substance has a toxic action. This presents, therefore, one of the most important problems in physiology, namely, the nature of the mechanism of the control of respiration, and the best means of supporting the respiratory process when a condition of failure seems imminent. It is recognized that carbon dioxide plays an indispensable part in the control of respiration. Much credit is due Dr. Henderson for focusing attention on this discovery and for reiterating with emphasis its practical significance. Experimental workers, while fully aware of the fact of diminished carbon dioxide during the early stages of anesthesia, have been slow to adopt corrective measures. At present the disastrous results of a moderate degree of asphyxia, plus the excessive decrease in the carbon dioxide of the blood, is a familiar sight in student laboratory work. The combination of partial anesthesia, a beginning asphyxia, and a reduction in blood carbon dioxide by hyperventilation is peculiarly lethal in effect. It is not surprising that difficulties have been encountered in establishing in clinical practice the principles of the use of carbon dioxide. The encouraging results reported are a tribute to those whose teachings have been carried on for years in the face of difficulties.

That the administration of carbon dioxide serves in some way to excite the respiratory center and thereby greatly increase the volume of air exchange in the lungs per minute is an easily demonstrated fact. But unless it can be definitely shown that continued carbon dioxide stimulation tends to establish favorable physiologic conditions in the organism, this procedure would seem to be of limited service. Dr. Henderson does not specifically state that an increased oxygen utilization occurs under carbon dioxide stimulation, but one is led to infer that this must result from the favorable oxygen-carbon dioxide relationship which he postulates.

In the use of carbon dioxide in asphyxia the conclusions to be drawn are (1) that it excites the respiratory center at a time when such a measure is desirable and (2) that it acts as a therapeutic agent to establish favorable physiologic relations. The grounds for the first claim seem quite easy to understand, particularly as applied to carbon monoxide poisoning and the postanesthetic period, since it is known that the ventilation of the lungs becomes increased through its action, and this brings into play essential factors to displace the monoxide combination of hemoglobin with the useful oxyhemoglobin. The other question, namely, the therapeutic effects of increased carbon dioxide, is more difficult to rationalize. Dr. Henderson stresses the rôle of carbon dioxide in restoring a favorable bicarbonate relation in the blood with an accompanying recovery of the normal irritability of the respiratory center. It is not easy to follow all the reasons for the bicarbonate shift, and questions will doubtless arise concerning this. Moreover, if the administration of carbon dioxide is not indicated in all cases of asphyxia, is it possible to set down quite precisely its indications? A question arises also whether there may not be overdosage effects. One group of observers state that breathing a 7.5 per cent mixture of carbon dioxide for twenty minutes produces a shock from which the system does not wholly escape for some hours. May not cardiac and vascular factors play essential rôles? Indeed, there is evidence that carbon dioxide exerts a definite effect on cardiodynamics, and recent experiments indicate that it produces changes in the caliber of the cerebral vessels which may have a bearing on other observations that the volume flow of blood through the respiratory center plays an important part in its regulation.

One need not be greatly concerned with one theory or another as to how carbon dioxide acts, since any theory one wishes to adopt will not alter the facts. The real answer is given by the results obtained in the use of carbon dioxide under carefully controlled conditions. The evidence is favorable.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

25: 317-464 (March) 1933

- Lesions of Placental Vessels: Their Relationship to Pathology of Placenta; Their Effect on Fetal Morbidity and Mortality. T. L. Montgomery, Philadelphia.—p. 320.
- Clinical Study of One Hundred Cases of Developmental and Functional Deficiencies in the Female with Analysis of Treatment and Results. W. H. Cary, New York.—p. 335.
- Ovarian Struma: Morphologic, Pharmacologic and Biologic Examination. A. Plaut, New York.—p. 351.
- *Use of Folliculin in Involutional States. E. L. Sevringhaus, Madison, Wis.—p. 361.
- Radiation Therapy in Gynecologic Malignancy. I. I. Kaplan, New York.—p. 368.
- *Information Regarding Gonorrhea in Immature Female. G. C. Schaeffer and C. Kuhn, Portland, Ore.—p. 374.
- Spontaneous Evolution of the Fetus in Transverse Presentation. N. J. Eastman, Baltimore.—p. 382.
- Postmenopausal Bleeding. S. H. Geist and M. Matus, New York.—p. 388.
- *Clinical Pathologic Study of Three Hundred and Three Consecutive Abdominal Hysterectomies. A. Samuels and E. S. Edlavitch, Baltimore.—p. 397.
- Do Sperm Morphology and Biometrics Really Offer a Reliable Index of Fertility? G. L. Moench, New York.—p. 410.
- Vesico-Ureteral Reflux as Etiologic Factor in Pyelitis of Pregnancy. H. L. Morris and J. F. Brunton, Detroit.—p. 414.
- Account of a Year's Service in Obstetrics at Morrisania Hospital: Public Institution. H. Aranow, New York.—p. 420.
- Survey of Cesarean Sections Performed in Philadelphia During 1931. C. B. Lull, Philadelphia.—p. 426.
- Cystic Fibroid Weighing Forty-Seven Pounds and Simulating an Ovarian Cyst. J. P. Greenhill, Chicago.—p. 440.
- Submucous Myoma Complicating the Puerperium: Review of Literature with Report of Case. B. Mann and Henrietta Lowenburg, Philadelphia.—p. 443.
- Tumors of Round Ligament. C. F. Horine, Baltimore.—p. 446.
- Ectopia Cordis: Case. C. Lintgen, Philadelphia.—p. 449.
- Instrument Facilitating Atraumatic Palpebral Separation in the New-Born. M. A. Castallo, Providence, R. I.—p. 451.

Folliculin in Involutional States.—Sevringhaus presents the results he obtained in a series of thirty-two women, who presented psychic and nervous phenomena that are commonly associated with the involutional state, and whom he treated with folliculin. Hot flashes occurred in all the patients of the series, paresthesias in sixteen, insomnia in nineteen and psychotic pictures in seventeen. Obesity was observed in only thirteen, and hypertension in ten. Of this series six had artificial climacteric produced by irradiation or surgery, and there were three patients with a spontaneous premature menopausal picture, possibly to be considered as ovarian insufficiency. The author found the use of simple psychotherapeutic procedures and small doses of folliculin daily or oftener helpful in the psychotic cases as well as in the simpler vasomotor types and the pseudothyrotoxic types previously reported. The refractory nature of the artificial menopause leads to a discussion of the possible relationships of the pituitary and the ovaries at the age of the climacteric. Overdosage has caused the reappearance of menses in one truly menopausal woman, has provoked menorrhagia and increased dysmenorrhea in an early menopausal patient, and a single dose of 50 units has produced in still another woman a violent and persistent hot flash with great discomfort; therefore the author's dose in the present series was from 10 to 25 units at one time, given once or twice daily.

Gonorrhea in Immature Women.—Schaeffer and Kuhn state that douches, instillations and injections have been used empirically and ineffectually for too many years in the treatment of vaginal gonorrhea in the immature. They believe that the most effective approach is through the use of a relatively firm ointment base, injected by a technic that insures the pro-

duction of sufficient intravaginal pressure to cause invasion of the ointment into every crypt and corner. They recommend the use of plain anhydrous wool fat, incorporating an appropriate concentration of any worthwhile antiseptic. They use 1 per cent silver nitrate. The ointment should not be warm, as its quality of firmness facilitates distention of the vagina with the use of mild intravaginal pressure. Also, it is more easily and completely retained if cold and has the highest possible fluid affinity, which makes it a highly effective vehicle for carrying the antiseptic into the moist vaginal wall—in contrast to the usual petrolatum base, which is repulsed by moisture. Their clinical studies have been supplemented by the injection of postmortem specimens by this technic. By this method they have obtained a consistent, complete and satisfactory application of the medicament, which remains in the vagina over periods varying up to forty-eight hours. The use of this method in more than 2,000 treatments has in no instance resulted in any untoward incident.

Study of Abdominal Hysterectomies.—Samuels and Edlavitch report a series of 303 consecutive abdominal hysterectomies performed for a variety of pathologic conditions in which there was a mortality of 2.6 per cent. Approximately 85 per cent of the uteri were removed for myomas, chronic pelvic inflammation and malignant conditions, and the important symptoms necessitating surgical aid were pain, bleeding and tumor. There were eight instances of cancer of the fundus of the uterus and cancer of the cervix, four of each. Statistical reviews of major surgical operations at periodic intervals will reveal many interesting facts and tend to increase the efficiency of the surgical departments of hospitals.

American Journal of Ophthalmology, St. Louis

16: 193-287 (March) 1933

- Experimental Studies in Diathermy Applied to Eye and Orbit: B. Comparison of Thermal Effects of Diathermy, Infra-Red Radiation and Electric Heating Pad. W. F. Moncreiff, J. S. Coulter and H. J. Holmquest, Chicago.—p. 193.
- Certain Motor Anomalies of Eye in Relation to Prescribing Lenses. C. Berens, P. T. Connolly and Dorothy Kern, New York.—p. 199.
- Chemistry of Sclera. A. C. Krause, Baltimore.—p. 214.
- Results of Recent Investigations in Etiology of Trachoma. H. J. Howard, St. Louis.—p. 218.
- Details of Cataract Extraction. R. E. Wright, Madras, India.—p. 228.
- Extreme Bilateral Exophthalmos: Report of Two Cases with Autopsy Findings in One. H. G. Merrill and L. W. Oaks, Provo, Utah.—p. 231.

American Journal of Pathology, Boston

9: 149-274 (March) 1933

- Microincineration of Intracellular Inclusions in Yellow Fever. E. V. Cowdry, St. Louis.—p. 149.
- Studies on Pathogenesis of Erythroleukosis. H. L. Ratcliffe and J. Furih, with assistance of C. Breedis, Philadelphia.—p. 165.
- Amyloid Disease of Kidneys. E. T. Bell, Minneapolis.—p. 185.
- *Relation Between Mitochondria and Glucose-Glycogen Equilibrium in the Liver. E. M. Hall, Los Angeles, and E. M. MacKay, San Diego, Calif.—p. 205.
- Similarity of Virus Pneumonia in Animals to Epidemic Influenza and Interstitial Bronchopneumonia in Man. H. A. McCordock and R. S. Muckenfuss, St. Louis.—p. 221.
- Microtechnical Demonstration of Insoluble Lime Salts in Tissues. G. Gomori, Budapest, Hungary.—p. 253.
- Pigment Deposits in Intestinal Muscle Coats and Their Relation to Diet Factors. E. Nachtnabel, Rochester, N. Y.—p. 261.
- Structure Suggesting Spinal Cord Found in an Ovarian Dermoid. J. McFarland, Philadelphia.—p. 271.

Mitochondria and Dextrose-Glycogen Equilibrium in the Liver.—Hall and MacKay produced disturbances of the dextrose-glycogen equilibrium in the livers of rabbits by feeding them large quantities of dried and fresh carrots followed by periods of fasting, by feeding dextrose to the fasting animals and by injections of epinephrine in the fasting animals. Excessive amounts of glycogen, as high as 13.1 per cent, were obtained in the animals fed on dried carrots. Amounts ranging from 3.5 to 5.7 per cent were obtained in the animals fed fresh carrots and in those given dextrose. Injections of epinephrine produced mainly glycogenolysis. Marked changes in the mitochondria were observed in the animals fed on dried carrots. In place of the usual short bacilliform rods, long filaments, coarse spherules and plump rods were found condensed about the nucleus and to a lesser degree about the cell membrane. Twelve hours after fasting, this group produced coarse spherules without definite arrangement in the cytoplasm. Many of these

appeared to be semifluid. The administration of dextrose caused hypertrophy and enspherulation of mitochondria, with some tendency to paranuclear arrangement. The authors conclude that some relation exists between the mitochondria of the hepatic cell and the dextrose-glycogen equilibrium. They are unable to say whether or not the chondriosomes act as catalysts, as they appear to do in the synthesis of fat within the hepatic cell.

American Journal of Physiology, Baltimore

103: 517-728 (March 1) 1933. Partial Index

- Experimentally Produced Premature Systolic Arrhythmia (Pulsus Bigeminus) in Rabbits: V. Factors That Affect Its Onset, Duration, Arrest and Alteration. W. F. Allen, Portland, Ore.—p. 559.
- Studies on Thyroglobulin: II. Absorption of Thyroglobulin and Related Substances from the Alimentary Canal. B. O. Barnes and J. G. Bueno, Chicago.—p. 570.
- Chemical Observations on Fluids of Seminal Tract: I. Inorganic Phosphorus, Calcium, Nonprotein Nitrogen and Glucose Content of Semen and of Seminal Vesicle, Prostate and Spermatocoele Fluids in Man. C. B. Huggins and Anna A. Johnson, Chicago.—p. 574.
- Effects of Prolonging Life of Corpus Luteum in Rabbit by Hysterectomy. S. A. Asdell and J. Hammond.—p. 600.
- Physiologic Variations in Glucose Ratio of Blood and Cerebrospinal Fluid. D. J. Cohn, A. Levinson and Frances McCarthy, Chicago.—p. 613.
- Effects of Sugar and Electrolyte Solutions on Metabolism and Irritability of Heart Muscle. J. Victor, New York.—p. 620.
- Nature of Responses of Smooth Muscle to Adrenaline and Augmentor Action of Cocaine for Sympathetic Stimuli. A. Rosenblueth and D. McK. Rioch, Boston.—p. 681.
- Excretion of Iodine in Experimental Hyperthyroidism. B. O. Barnes, Chicago.—p. 699.
- Studies on Coronary Circulation: II. Absorption of Lactic Acid and Glucose and Gaseous Exchange of Heart Muscle. D. A. McGinty and A. T. Miller, Jr., Emory University, Ga.—p. 712.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

29: 293-436 (March) 1933

- Relative Effects Produced by 200 Kilovolt Roentgen Rays, 700 Kilovolt Roentgen Rays and Gamma Rays: I. Distribution of Radiation in a Water Phantom. G. Failla, Edith H. Quimby, L. D. Marinelli and J. E. Rose, New York.—p. 293.
- Id.: II. Comparison Based on Effects on Iodides, Eder's Solution and Photographic Film. H. Q. Woodard, Edith H. Quimby and H. R. Downes, New York.—p. 308.
- Id.: III. Comparison Based on Effects on Drosophila Eggs and on Wheat Seedlings. P. S. Henshaw, C. T. Henshaw and D. S. Francis, New York.—p. 326.
- Id.: IV. Comparisons Based on Biologic Changes Produced in Mamalian Tissues with 200 Kilovolt Roentgen Rays and Gamma Rays. H. J. Bagg and C. R. Halter, New York.—p. 334.
- *Id.: V. Comparison Based on Production of Erythema in Human Skin. J. J. Duffy, R. F. McNattin, M. M. Copeland and Edith H. Quimby, New York.—p. 343.
- *Id.: VI. Comparison Based on Clinical Observations. R. F. McNattin, New York.—p. 346.
- Id.: VII. Correction of Experimental Results. G. Failla, New York.—p. 352.
- Roentgen Diagnosis and Localization of Opaque Foreign Bodies in Air Passages. W. F. Manges, Philadelphia.—p. 368.
- Inferior Accessory Lobe of Lung. L. G. Rigler and L. G. Erickson, Minneapolis.—p. 384.
- Multiple Tumor Implants in Ventricles Revealed by Ventriculography: Report of Case. J. R. Larnmonth and J. D. Camp, Rochester, Minn.—p. 393.
- Encephalography in Case of Localized Subcortical Hemorrhage. F. Schreiber, Detroit.—p. 395.

Effect of Roentgen and Gamma Rays on Human Skin.

—Duffy and his associates chose patients at random and administered the predetermined dose in order to determine the production of erythema in the human skin. Each patient was seen at weekly intervals for at least four weeks, and the presence or absence of reaction was noted. In their series of tests, the extensor surface of the forearm was used for all irradiations. This field was chosen because the 700 kilovolt machine activates a horizontal tube. Three types of radiations were used in these experiments: radiations produced by 200 and 700 kilovolts, and gamma rays from the radium element pack. Roentgen rays produced at 200 kilovolts were taken as the norm with which the other types of rays were compared. The roentgen output was measured physically before each set of skin tests, so that the error from daily fluctuation was avoided. Roentgen rays at 200 kilovolts produce a threshold erythema on the extensor surface of the forearm with 540 roentgens, measured in air. The rate of output of the 700 kilovolt machine as measured by this biologic effect is 8.6 roentgens per minute at a distance of 50 cm. The 4 Gm. radium pack at 6 cm. has an output of 2.8 roentgens per

minute according to the erythema reaction test. The calculated equivalent outputs of the pack for 10 and 15 cm. distances are 1.2 and 0.57 roentgens per minute, respectively.

Clinical Observation of Roentgen and Gamma Rays.—McNattin summarizes his clinical observations as follows: 1. Therapeutic doses of comparable effectiveness may be administered to tumors of the upper respiratory tract by the divided dose method, using 200 or 700 kilovolt roentgen rays, or gamma rays of radium. 2. A survey of such cases treated at the Memorial Hospital with each of the three qualities of radiation indicates that the tumor doses which, as a first approximation, may be considered to be therapeutically equivalent, are: for 200 kilovolt roentgen rays, 6 threshold erythema doses; for 700 kilovolt roentgen rays, 4.7 and, for gamma rays, from 1.6 to 2.2 threshold erythema doses, each administered fractionally over a period of three weeks (or longer in the case of gamma rays). The threshold erythema unit used by the author is equivalent to 600 roentgens of 200 kilovolt roentgen rays filtered by 0.5 mm. of copper and 3 mm. of aluminum, including back scattering, and administered at one time. When these tumor doses are administered, the skin reaction is marked in the case of the 200 kilovolt roentgen rays, also with the gamma rays, and, thus far, the least severe reaction has been in the cases treated with 700 kilovolt roentgen rays. On the other hand, after the skin has healed, the mildest subsequent changes are found in the cases treated with gamma rays. The constitutional effects have been relatively mild in patients treated with 700 kilovolt roentgen rays, and about equally severe in all cases treated with 200 kilovolt roentgen rays and those treated with the radium pack.

American Journal of Tropical Medicine, Baltimore

13: 141-242 (March) 1933

- Recent Distribution of Malaria in Southeastern United States. M. F. Boyd and G. Ponton, Tallahassee, Fla.—p. 143.
- Malaria in the Philippine Islands. P. F. Russell, Manila, P. I.—p. 167.
- *Laboratory Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever, with Especial Reference to Cross Immunity Tests. L. F. Badger, Washington, D. C.—p. 179.
- *Typhus Fever: Some Notes on Cultivation of Virus and on Active Immunity. H. A. Kemp, Dallas, Texas.—p. 191.
- Notes on Relapsing Fever in Panama, with Especial Reference to Animal Hosts. L. H. Dunn and H. C. Clark, Panama, Rep. of Panama.—p. 201.
- African Sleeping Sickness: Review of Nine Thousand Cases from a Central African Clinic. E. R. Kellersberger, Bibanga, Belgian Congo, Africa.—p. 211.

Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever.—Badger states that two members of the worldwide typhus-like group of fevers occur endemically in the United States: endemic typhus and Rocky Mountain spotted fever, which is now known to occur in widely separated sections of the country. The identification in the laboratory of an unknown strain of virus as one of endemic typhus or as one of spotted fever is based on the following criteria: The clinical manifestations and pathologic anatomy produced in animals by the unknown virus must be similar to those produced by the known virus; agglutinins for *Bacillus proteus*, X₁₀ are produced in the serum of the rabbit and the monkey; definite and complete cross immunity is produced with a known strain of the suspected virus. In addition to these criteria, the cultures of the cardiac blood of animals from which transfers are made must be consistently negative bacteriologically. In performing cross immunity tests, precautions must be taken to rule out secondary infections and nonspecific immunity.

Typhus.—Kemp attempted to cultivate the virus of typhus from the blood of ten patients with endemic typhus. He used dextrose-cystine-brain-veal agar, a medium known to be suitable for the cultivation of *Pasteurella tularensis*. Incubation was carried out aerobically and under conditions of reduced oxygen tension. Gram-positive diphtheroids were obtained from six of the ten patients, and a gram-negative rod belonging to the proteus group was obtained from two. None of these organisms produced signs or symptoms of typhus when inoculated into guinea-pigs. The same animals were not immune to typhus passage virus. Attempts to cultivate the virus from blood cultures or infected tissue (guinea-pig tunica vaginalis) on Kendall's K medium, both liquid and solid, were completely unsuccessful. A strain of *Bacillus proteus* (American type culture 881), carried through ten generations on liquid K

mediums with both daily and weekly transfers, did not become pathogenic for guinea-pigs. The same animals were found afterward not to be immune to passage virus. Evidence obtained from tissue culture seems to show that the virus is an obligatory parasite. Cultivation in the living animal body (Zinsser and Castaneda) seems to offer the best means for developing quantities of the virus.

Annals of Otol., Rhinol. and Laryngology, St. Louis

42: 1-320 (March) 1933

- *Cicatricial Stenosis of Larynx. L. H. Clerf, Philadelphia.—p. 1.
- Histology and Chronic Inflammation of Nasal Mucous Membrane. L. A. Schall, Boston.—p. 15.
- Nasal Accessory Sinuses as Foci of Infection in Chronic Arthritis. L. M. Hurd, New York.—p. 39.
- Pulmonary Complications of Tonsillectomy: Report of Three Cases. J. A. Babbitt, Philadelphia.—p. 47.
- Cavernous Sinus: Anatomic and Clinical Considerations. E. H. Campbell, Philadelphia.—p. 51.
- Resistance of Upper Respiratory Mucosa to Infection. C. S. Linton, St. Louis.—p. 64.
- Vertical Semicircular Canals in Light of Recent Work. W. J. McNally, Montreal, Canada.—p. 82.
- Hematology and Blood Dyscrasias in Relation to Diseases of Eye, Ear, Nose and Throat. O. H. P. Pepper, Philadelphia.—p. 87.
- Cardiovascular Diseases in Relation to Retina. N. M. Keith, Rochester, Minn.—p. 95.
- Practical Application of Wittmaack's Theory of Pneumatization. R. Almour, New York.—p. 112.
- Rhinologic Aspects of Tear Sac Surgery. E. King, Cincinnati.—p. 126.
- Improved Hearing in Fixation Deafness: Case Reports—Comments. E. R. Lewis, Los Angeles.—p. 135.
- Use of Author's Improved Bronchoscope and Esophagoscope in Diagnosis and in Removal of Foreign Bodies. S. Israel, Houston, Texas.—p. 157.
- *Influence of Sympathetic Nervous System on Internal Ear. A. B. Murphy, Everett, Wash.—p. 166.
- Microscopic Observations of Petrous Apex. H. N. Glick, St. Louis.—p. 175.
- Waves Versus Vibrations in Otology. F. P. Emerson, Boston.—p. 192.
- Antroscopy and Its Relation to Anatomy of Maxillary Sinus. E. Simon, Albany, N. Y.—p. 198.
- *Epistaxis in Pregnancy Requiring Ligation of External Carotid: Review and Case Report. A. Strauss, Cleveland.—p. 230.
- Acute Mastoiditis: Early Operation or Delayed? V. V. Wood, St. Louis.—p. 240.
- Cause of Otitis Media: Phylogenesis of the Ear. L. K. Guggenheim, St. Louis.—p. 251.
- Neoplasms of the Nose, Throat and Ear: Carcinoma of Hypopharynx. J. C. Beck and M. R. Guttman, Chicago.—p. 286.

Cicatricial Stenosis of Larynx.—Clerf reports a series of twenty-eight cases of cicatricial stenosis of the larynx found unsuitable for direct laryngoscopic dilation. All the patients had been tracheotomized for relief of dyspnea. In twenty-one, high tracheotomy had been performed; in sixteen there was an atresia of the airway. There was atresia in twelve of the thirteen cases of postdiphtheritic stenosis. Fifteen cases were treated by laryngostomy, followed by packing the larynx and using various forms of tube dilators. Atresia was present in seven of these cases and a portion of the cricoid cartilage had been destroyed in nine. One patient became discouraged and discontinued treatment. Three have not been cured, although an epithelialized airway is present. The author concludes that improperly performed tracheotomy and inadequate after-care are the most common factors in the etiology of cicatricial stenosis of the larynx. Recognition of this fact is of great importance in prophylaxis. The translaryngeal fixation operation seems to be the method of choice in the treatment of cases of cicatricial stenosis of the larynx that cannot be treated by the more conservative methods. This procedure obviates the need for frequent, time consuming, painful dressings and changes of apparatus. The duration of treatment and the period of hospitalization are shortened. Results, even in cases in which there is a loss of the normal supporting tissues of the larynx, are uniformly good.

Sympathetic Nervous System and the Internal Ear.—Murphy studied the effect on the labyrinth of interruption of the cervical sympathetic innervation in animals and in man. The first, second and third thoracic ganglions as well were interrupted in some of the cases. Spontaneous phenomena relative to the labyrinth were absent. Variations beyond normal limits in the threshold of excitability of the labyrinth could not be determined. General vasomotor changes, evidenced by pallor and sweating, were the same, regardless of the side from which they were induced. The variations in past pointing can be accounted for by the increased muscular tone in the extremity rather than by labyrinthine influence. The vaso-

dilatory innervation to the inner ear may be part of the cranio-autonomic system.

Epistaxis in Pregnancy.—Strauss reports a case of epistaxis in a pregnant woman, aged 27, in whom there was constant bleeding until ligation of the external carotid was performed on the seventh day. There was no further nose-bleed. On the ninth day the patient aborted a four to four and a half months old fetus. She was discharged on the ninth postoperative day. From the study of this case and a review of the literature the author concludes that, in a case of severe uncomplicated epistaxis when local treatment and transfusion fail, ligation of the external carotid should be performed to save the life of the patient. Severe epistaxis during pregnancy may be stopped by terminating pregnancy. Ligation of the external carotid artery to stop epistaxis in pregnancy should be preferred in order to save the life of the child.

Archives of Pathology, Chicago

15: 321-464 (March) 1933

- Histologic Changes in Thyroid Gland of Rabbit Following Injection of Urine. C. A. Hellwig, Wichita, Kan.—p. 321.
- Coccidiosis of Liver in Rabbits: II. Experimental Study on Mode of Infection of Liver by Sporozoites of *Eimeria stiedae*. H. Smetana, New York.—p. 330.
- Angiomatous Malformations of Brain: Report of Two Cases of Angioma Racemosum. V. Levine, Chicago.—p. 340.
- *Anatomic Lesions of Fatal Mercurial Intoxication from Salyrgan. M. Rosenthal, Brooklyn.—p. 352.
- Pathology of Bronchiectasis. I. H. Erb, Toronto, Canada.—p. 357.
- *Attempt to Transmit Poliomyelitis to Splenectomized Guinea-Pigs. H. Chor, St. Louis.—p. 387.

Anatomic Lesions from Salyrgan.—Rosenthal states that, although the impression of the lesser toxicity of salyrgan is probably justified, he presents a report that concerns a patient with congestive heart failure who received this mercurial diuretic shortly before death and who showed definite anatomic signs of mercurialism at necropsy. Since only a small quantity of salyrgan was given, the author's patient apparently possessed an increased susceptibility to the drug, a suggestion supported by the evidence found by Andrews in his case. In view of the increasingly widespread use of salyrgan and the numerous favorable reports from experimental and clinical studies of its action, this case is of interest, since it supports the doubt held by some authors as to the absolute harmlessness of the drug by the actual demonstration in man of structural lesions due to the presence of mercury in the tissues.

Attempt to Transmit Poliomyelitis to Splenectomized Guinea-Pigs.—According to the experiments of Chor, splenectomized guinea-pigs do not acquire the nerve lesions characteristic of poliomyelitis following inoculation with potent monkey virus, either in direct or in passage experiments. Splenectomized guinea-pigs show a decrease in resistance to such inoculation, which produces in many a condition characterized by fever, general sluggishness and lymphoid hyperplasia, with death often occurring within fourteen days.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

14: 133-188 (March) 1933

- Therapeutic Use of Polarized Air. W. Bierman, New York.—p. 133.
- The Cancer Problem of the General Surgeon. M. Thorek, Chicago.—p. 138.
- *Cancer of Cervix Uteri: Consideration of Methods of Treatment in Addition to Surgery and Irradiation. R. J. Behan, Pittsburgh.—p. 144.
- Work of Special Committee of Physical Therapy of Medical Society of the State of New York. R. Kovacs, New York.—p. 150.
- Teaching of Physical Therapeutics in Medical School Curriculum. F. H. Krusen, Philadelphia.—p. 154.
- Physical Therapy in Public Hospitals of New York City. C. F. McCarty, New York.—p. 160.
- Future Problems in Education of Physical Therapy Technicians. Mary Elizabeth Hibbler, New York.—p. 163.
- Development of Present Standards for Physical Therapy Technicians. Kathleen F. King, New York.—p. 166.
- Value of Physiotherapy in Visiting Nurse Organization. Helen King, Detroit.—p. 168.

Cancer of Cervix Uteri.—Behan states that, in cancer of the cervix, surgery, which includes endothermic removal and desiccation, does not give as good results as does surgery and irradiation. When ligation of the blood supply in addition to increased calcium intake and proper diet and hygiene is added to surgery and irradiation, there is an increase in the percentage of three and five year cures, and better results are attained than with surgery alone or in combination with irradiation. From the author's point of view, auxiliary methods of treat-

ment are only indications of one's efforts to seek other means, in addition to those usually employed, for the improvement of cancer patients.

Archives of Surgery, Chicago

26: 345-538 (March) 1933

- *Wound Healing in Anterior Gastro-Enterostomy Following Various Methods of Suture: Experimental Study in Dogs. K. H. Martzloff and G. R. Suckow, Portland, Ore.—p. 345.
- Etiology of Gallstones: IV. Is Cholesterol Excreted by Gallbladder Mucosa? E. Andrews, L. E. Dostal and L. Hrdina, Chicago.—p. 382.
- Calcinosis Universalis. B. J. Hein, Toledo, Ohio.—p. 389.
- Traumatic Encephalitis: Case Reports of So-Called Cerebral Concussion with Encephalographic Findings. A. E. Bennett and H. B. Hunt, Omaha.—p. 397.
- *Experimental Ileus: III. Prolongation of Life for Seventy Days After High Intestinal Obstruction by Administration of Sodium Chloride and Nutritive Material into Intestine Below the Site of Occlusion. H. P. Jenkins and W. F. Beswick, Chicago.—p. 407.
- Breaking Strength of Healing Fractured Fibulas of Rats: VI. Observations on Influence of Bilateral Ovariectomy. R. M. McKeown, S. C. Harvey and R. W. Lumsden, New Haven, Conn.—p. 430.
- *Syphilis of Stomach, with Especial Reference to Its Recognition at Operation. K. A. Meyer and H. A. Singer, Chicago.—p. 443.
- *Resected Knee Joints. R. K. Ghormley and E. A. Brav, Rochester, Minn.—p. 465.
- "Orbital Inclusion" Cysts and Cysto-Adenomas of Parotid Salivary Glands. C. J. Kraissl and A. P. Stout, New York.—p. 485.
- Preserved Fascia in Hernia Repair, with Especial Reference to Large Postoperative Hernias. A. R. Koontz, Baltimore.—p. 500.
- *Stab Wound of Heart: Report of Two Cases. F. Beekman, New York.—p. 510.
- Exposure of Heart to Atmospheric Pressure: Effects on Cardiac Output and Blood Pressure. A. Blalock, Nashville, Tenn.—p. 516.
- Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; J. Verbrugge, Antwerp, Belgium; A. A. Kutzmann, Los Angeles; A. B. Hepler, Seattle, and R. Gutierrez, New York.—p. 522.

Wound Healing in Anterior Gastro-Enterostomy.—Martzloff and Suckow present a study based on experimental observations on forty-four dogs, which they undertook in order to determine whether serosal cysts would form between apposed peritoneal surfaces and also what differences, if any, occurred in healing following the use of various suture methods. Anterior gastroduodenostomies were performed by various suture methods, while the suture material was uniform throughout. The most rapid and uncomplicated healing on the anterior aspect of the gastroduodenal ostium was obtained by the use of a single layer of serosubmucosal presection silk sutures. Separate suture of the mucosa, whether employed anteriorly or posteriorly as in the three layer suture methods, not only is unnecessary for rapid mucosal healing but is probably a retarding factor and therefore an undesirable as well as an added technical step. Mucosal healing, like healing along the line of apposition, was most rapid with one layer presection sutures. Four types of suture methods were used on the posterior aspect of the gastroduodenal ostium. The best healing was obtained either with an inner row suture passed through all coats of the stomach and intestine as an ordinary continuous stitch or with a similar suture passed through serosa and submucosa, leaving the cut edges of the mucosa free. The latter confirms the authors' observations on the anterior aspect of the ostium, that separate suture of the mucosa is not necessary for rapid mucosal healing. Good posterior healing was also obtained with the three layer suture technic, and most undesirable of all was the healing following the use of an inner row lock-stitch suture, which has a strangulating effect on the involved tissue. The authors believe that their observations warrant the conclusion that fine plain catgut, when passed through the entire thickness of the gastric or intestinal wall, does not cause the development of mucosal inclusions along the course of the suture, as in the case of improperly placed silk suture material. Their observations also indicate that when silk suture material is placed without piercing the gastro-intestinal lumen its presence causes practically no inflammatory reaction. Halsted sutures so placed tend to migrate toward the serosa, while those that pierce the mucosa become infected, are the cause of mucosal inclusions in the intestinal wall and slough into the lumen either through the intestinal wall or along the line of apposition. If silk suture material is used, it is probably preferable to use interrupted sutures.

Experimental Ileus and Sodium Chloride.—In high intestinal obstruction an important factor in the cause of death is the loss of digestive secretions. This view is supported by

Jenkins and Beswick's experiment, in which some animals lived from fifty-two to seventy days with a high obstruction. The rôle of the sodium chloride solution, administered daily through a jejunostomy opening below the obstruction, was to replace the water and important blood electrolytes, fixed base (chiefly sodium) and chloride ions, ordinarily lost through failure of resorption and vomiting. In regard to obstruction low in the intestinal tract or complicated by necrosis of the intestine, the loss of digestive secretions may be a factor in the cause of death; but this is of varying importance, depending on the length of intestine above the obstruction which would offer opportunity for some resorption of the secretions. It is in this group that toxemia probably plays the more important part, and in man operative treatment should be resorted to immediately. The beneficial effect of the administration (subcutaneously or intravenously) of saline solutions clinically in cases of intestinal obstruction appears to depend largely on the extent to which the body has suffered from the loss of digestive secretions from failure of resorption and vomiting. When toxemia is a conspicuous factor, its benefit may be masked to some extent.

Syphilis of Stomach.—Meyer and Singer state that the features that serve to distinguish syphilis of the stomach from carcinoma are as follows: There is a striking disparity in many cases between the extent of the lesion as determined roentgenologically and the extent as observed operatively by palpation. Whereas in carcinoma one generally finds at laparotomy a more extensive involvement than the roentgenogram indicates, in syphilis of the stomach there is a surprising paucity or complete absence of changes as determined by palpation. The common lesion of gastric syphilis is not a spherical prominence as in a tumor, gummatous or neoplastic, but a flat infiltrate that leads to a plaque-like thickening of the gastric wall. When thin, the infiltrate is readily overlooked. When thick, its relatively soft consistency and pliability distinguish it from carcinoma. On cross-section, the increase is seen to be due to an edematous fibrous tissue located chiefly in the submucosa. Inspection of the interior of the stomach generally discloses one or more superficial, serpiginous ulcers involving a large part of the plateau formed by the infiltrate. The base of the syphilitic ulcer, contrary to the peptic variety, is situated at a higher level than the normal mucous membrane. Fibrous and edematous thickening of the serosa and adhesions, when present, suggest an inflammatory rather than a neoplastic lesion. Associated syphilitic changes that may be detected during the course of the operation include hepatic, intestinal and splenic syphilis. Of these, the coexistence in the liver of gummas, deep stellate scars or subtotal destruction of the left lobe is of greatest aid in the recognition of the type of gastric disease present. The authors report two cases in which the gross features of the gastric lesion led to the correct diagnosis. One patient was operated on by a colleague who, on palpating the stomach, immediately apprehended that he was dealing with an unusual condition and predicted with confidence that the involvement was syphilitic. The diagnosis in the other patient was based chiefly on the observations made at operation, since from biopsy the condition was reported as simple nonspecific inflammation.

Resected Knee Joints.—Ghormley and Brav studied the clinical history, roentgenograms, lesions discovered grossly and microscopically and results of inoculation of guinea-pigs in a series of 236 resections and nine amputations of the knee joint. The preoperative diagnosis was found to be incorrect in 24.4 per cent of the cases of tuberculosis and in 13.7 per cent of the cases of nontuberculous arthritis. The gross specimens and roentgenograms were found to vary so widely as often to prevent the possibility of accurate diagnosis. The inoculation of guinea-pigs proved incorrect in 12.5 per cent of the twenty-four cases in which inoculation was made. The diagnosis made by microscopic examination of tissue removed at the time of operation has been found to be accurate in all but 3.2 per cent of the cases, an error of omission.

Stab Wound of Heart.—Beekman reports two cases of stab wounds of the chest that involved the heart. In the first there was a perforating wound of the right ventricle, which was rapidly fatal as a result of loss of blood. In the second there was a penetrating wound of the musculature of the left ventricle, a cardiac tamponade developing, which was tem-

porarily relieved by the aspiration of blood from the pericardial sac; this case later came to operation, and the wound was sutured. The patient recovered, following a stormy convalescence in which pneumonia of both lungs, an abscess of the right lung and empyema developed.

Arkansas Medical Society Journal, Little Rock

29: 205-224 (March) 1933

- Attitude of the American Medical Association Toward Socialism, Industrialism and Insurance Commercialism in Medicine. S. Harris, Birmingham, Ala.—p. 205.
Psittacosis. F. J. Scully, Hot Springs.—p. 209.
Medicine and Public Health. H. T. Smith, McGehee.—p. 214.

California and Western Medicine, San Francisco

38: 145-232 (March) 1933

- The Private Practitioner and the Health Department. C. R. Howson, Los Angeles.—p. 145.
*Perinephritis: Suppurative and Nonsuppurative. C. P. Mathé, San Francisco.—p. 149.
Physique and Psyche in Phthisis. K. P. Jones and E. Bogen, Olive View.—p. 156.
Every Child Is Different. W. P. Lucas and Helen Brenton Pryor, San Francisco.—p. 163.
Veteran Hospitalization Problems. W. H. Geistweit, Jr., San Diego.—p. 165.
Doctors and Clinics. C. L. Mulfinger, Los Angeles.—p. 167.
Etiology of Inguinal Hernias. P. Stephens, Los Angeles.—p. 168.
The Doctor of Tomorrow. A. Gatewood, Chicago.—p. 171.

Perinephritis.—Mathé states that suppurative and nonsuppurative perinephritis occur independently in a certain number of cases, besides being secondary to diseases of the kidney and other extraneous lesions. Chronic perinephritis is divided into (1) fibrosis of the renal capsule; (2) chronic cicatrizing perinephritis with sclerosis of the perineal fat; (3) fibrolipomatous perinephritis in which the fatty capsule is sclerosed, indurated and hypertrophied, sometimes forming a veritable lipoma, which may invade the renal parenchyma, and (4) suppurative perinephritis or perinephric abscess, in which the inflammatory processes have undergone suppuration. The diagnosis of chronic perinephritis is obscure. Important points in distinguishing it are persistent pain, absence of urinary changes and (the author's sign) lack of renal mobility, as evidenced by taking a pyelogram in the standing position. This lack of renal mobility demonstrates without any doubt that there are inflammatory processes of the perinephric tissues which anchor the kidney in place. The most important points in the diagnosis of perinephric abscess are persistent fever, relative lack of urinary changes, obscuration of the roentgenologic shadow of the kidney and of the muscular and skeletal structures of the renal fossa, displacement of the ureter, and immobility of the kidney as evidenced by palpation and when making a pyelogram in the vertical position. The treatment of persistent, chronic, cicatrizing and fibrolipomatous perinephritis consists of nephrolysis and partial decapsulation by which the kidney is decompressed and liberated from its pathologic encasement, adhesions and conglutinations.

Iowa State Medical Society Journal, Des Moines

23: 115-186 (March) 1933

- Discussion of the Final Report of the Committee on the Costs of Medical Care. O. J. Fay, Des Moines.—p. 115.
Study of Incidence of Various Etiologic Types of Heart Disease in Iowa: Review of One Thousand Three Hundred and Twenty-Nine Cases. H. W. Rathe and W. D. Paul, Iowa City.—p. 125.
*Some Data on Uterine Cancer. N. F. Miller, Ann Arbor, Mich.—p. 132.
Lateral Sinus Thrombosis Complicating Mastoiditis. R. H. Parker, Des Moines.—p. 136.
Syndrome of Internal Derangement of Knee Joint: General Review of Semilunar Cartilage Injuries and Loose Bodies. J. Kulowski, Iowa City.—p. 140.
Observations on Posttonsillectomy Patients. M. J. Joynt, Le Mars.—p. 150.
Blood Picture and Certain Related Clinical Implications. F. H. Lamb, Davenport.—p. 153.

Uterine Cancer.—During a ten year study of 219 consecutive patients with cancer of the female generative organs, Miller observed that the most significant early symptom of uterine cancer is abnormal discharge. Usually this appears as bleeding or "spotting" but may take the form of an abnormal leukorrheal discharge. The spotting is intermenstrual, progressive and prone to follow trauma. Spotting is far more significant as a symptom of cervical cancer than is leukorrhea. The sudden appearance of leukorrhea in older women or its

sudden change in character is also highly significant. The real need for a definite diagnosis in all patients with suggestive symptoms must be emphasized again and again. The possibility of cancer should be ruled out in every patient presenting indicative symptoms, even to the point of doing a biopsy with microscopic examination of the tissues, if necessary. Physicians who speak on cancer of the female generative organs should avoid discussion of late symptoms, which may lead the patient astray and defeat the purpose of the talk. The early symptoms may be ignored and the patient may wait for further evidence before having her innermost fears confirmed or refuted. Emphasis should be placed on spotting and abnormal discharge. The need for more extensive use of the surer methods of diagnosis is stressed by the high percentage of inaccurate diagnoses before admission.

Journal of Bacteriology, Baltimore

25: 239-321 (March) 1933

- Epizootic Hepato-Enteritis in Guinea-Pigs. Z. Morcos, Cairo, Egypt.—p. 239.
Experiments with Kendall's Medium. Harriet M. Carpenter and P. H. Long, Baltimore.—p. 241.
Desiccation and Preservation of Infectious Laryngotracheitis Virus. C. S. Gibbs, Amherst, Mass.—p. 245.
Weighted Mean Method of Averaging Bacterial Counts of Milk. J. W. Bigger and L. L. Griffiths, Dublin, Ireland.—p. 253.
Cytologic Changes During Formation of Endospore in *Bacillus Megaterium*. S. Bayne-Jones and A. Petrilli, Rochester, N. Y.—p. 261.
Studies of Freshwater Bacteria: I. A Direct Microscopic Technic. A. T. Henrici, Minneapolis.—p. 277.
Pneumococcus Variants Intermediate Between S and R Forms. F. G. Blake and J. D. Trask, New Haven, Conn.—p. 289.
Gram Stain and Differential Staining. M. L. Kaplan and Leah Kaplan, New York.—p. 309.

Journal of Experimental Medicine, New York

57: 349-526 (March 1) 1933

- Some Effects of Anterior Pituitary Extracts on Nitrogen Metabolism, Water Balance and Energy Metabolism. O. H. Gaebler, Detroit.—p. 349.
Nutritional Encephalomalacia in Chicks: Influence of Age, Growth and Breed on Susceptibility. A. M. Pappenheimer and Marianne Goettsech, with the assistance of Anna Alexieff, New York.—p. 365.
Studies on Precipitin Reaction: Precipitating Haptens; Species Differences in Antibodies. M. Heidelberger and F. E. Kendall, New York.—p. 373.
Studies on Typhus Fever: X. Further Experiments on Active Immunization Against Typhus Fever with Killed Rickettsia. H. Zinsser and M. R. Castaneda, Boston.—p. 381.
Id.: XI. Report on Properties of Serum of Horse Immunized with Killed Formalinized Rickettsia. H. Zinsser and M. R. Castaneda, Boston.—p. 391.
Splenectomy in Bile Fistula Dogs: Bile Pigment Overproduction, Anemia and Intoxication. F. B. Queen, W. B. Hawkins and G. H. Whipple, Rochester, N. Y.—p. 399.
Manner of Removal of Proteins from Normal Joints. W. Bauer, C. L. Short and G. A. Bennett, Boston.—p. 419.
Cellular Mechanisms of Renal Secretion: Study by Extravital Method: I. Structural Phase of Secretory Mechanism. Jean R. Oliver and Edna Morris Lund, Brooklyn.—p. 435.
Id.: II. Functional Phase of Secretory Mechanism. Jean R. Oliver and Edna Morris Lund, Brooklyn.—p. 459.
*Study of Bacterial Capsule by New Methods. J. W. Churchman and N. V. Emelianoff, New York.—p. 485.
*Epithelial Repair in Recovery from Vitamin A Deficiency: Experimental Study. S. B. Wolbach and P. R. Howe, Boston.—p. 511.

Staining Bacterial Capsule.—Churchman and Emelianoff outline a new method for staining capsules. With this method appearances are produced about the somas of a number of non-capsulated organisms which resemble capsules. The best results have been obtained when young organisms (not more than 18 hours old) from a culture on solid mediums were used for study, although capsules have also been stained in smears from broth cultures and (in the case of *Diplococcus pneumoniae*) from sputum. Use is made only of stain and fixative, which are applied together. No steps are taken (like preliminary treatment with serum, acetic acid, nutrose), which are designed to render the capsule more readily demonstrable but are likely also to produce somewhat more artificial conditions. Films are made from aqueous suspensions of the bacteria and are air dried. They are then covered with 10 drops of freshly filtered Wright's stain, which is left on until it has evaporated nearly, but not quite, to dryness, when a purplish pink replaces the original color of the Wright's stain. It is probable that staining of the capsule occurs just at this instant. The evaporation usually requires about three minutes. The stain is washed off as rapidly as possible with Clark and Lubs' buffer pH 6.4

to 6.5 and immediately dried with a fan without blotting. Sometimes the capsule is more satisfactorily stained if the film is rapidly washed with distilled water after the buffer has been used. Excellent specimens may also be obtained by leaving the air dried film in Wright's stain overnight, removing and allowing the stain to evaporate as described, and then washing rapidly with buffer and drying with the electric fan.

Vitamin A Deficiency.—According to the experiments of Wolbach and Howe on white rats, in vitamin A deficiency the replacement stratified keratinizing epithelium is morphologically identical in all locations. All cells of the lowermost layer of the replacement epithelium have proliferative power as in the stratum germinativum of the epidermis. In recovery, in spite of the complete morphologic masking, the epithelium in each region returns to its normal type. The important histologic features of repair involve removal of the layers of cells irreversibly differentiated toward keratinization and direct differentiation of the stratum germinativum into the normal type. These take place simultaneously. The histologic sequences observed in the removal of cells above the stratum germinativum indicate that autolysis, as shown by vacuolar degeneration, and heterolysis, as shown by leukocytic infiltration, are involved. The cycle of metaplasia and recovery in vitamin A deficiency affords an experimental method available for the correlation of nuclear chromatin and types of cytoplasmic activities.

Journal of Immunology, Baltimore

24: 185-265 (March) 1933

- Merthiolate as Preservative for Biologic Products: III. Action of Merthiolate on Bacteriophage. H. M. Powell, W. A. Jamieson and F. G. Jones, Indianapolis.—p. 185.
- Immunologic Specificity of Brain Tissue. J. H. Lewis, Chicago.—p. 193.
- *Comparison of Combining, Antigenic and Toxic Properties of Chemically Altered Diphtheria Toxoid and Toxin. L. Reiner, New York.—p. 213.
- Adsorption of Diphtheria Toxoid by Cellulose Derivatives and Iron Hydroxide Gel. L. Reiner, New York.—p. 221.
- H and O Agglutination Following Typhoid Vaccination and in an Unselected Group of Individuals. Anna Dean Dulaney, W. T. Wikle, R. L. Stewart, J. D. Rayfield, J. K. Walker, Jr., and A. B. Preacher, Memphis, Tenn.—p. 229.
- *H and O Agglutination in Typhoid Fever, Other Febrile Diseases, and in Vaccination. Anna Dean Dulaney and W. T. Wikle, Memphis, Tenn.—p. 235.
- Sedimentation Rate of Red Blood Cells of Tuberculous Rabbits Injected with Tuberculin. J. Freund and D. E. Frank, Philadelphia.—p. 247.
- *Participation of Cutaneous Epithelium in Immunity Response. L. Dienes, Boston.—p. 253.
- Additional Note to Article "Studies on Tobacco Hypersensitivity." Marion B. Sulzberger, New York.—p. 265.

Comparison of Diphtheria Toxoid and Toxin.—Reiner prepared azodyes from crude and from purified diphtheria toxoid by coupling them with the diazonium salt of arsenic acid. The dyes obtained were purified by dialysis and precipitation with acid at about pH 4 and pH 3. The dyes had practically lost their immunizing power but retained their combining power as measured by the Ramon test. The specific toxic and the nonspecific reaction causing properties of the dye were approximately the same as those of the original toxoid or toxin. Micro-arsenic and nitrogen determinations were made on the toxoid dye. High values were obtained for the ratio of arsenic to nitrogen; hence a high content of cyclic amino acids in the toxoid or else a decomposition during the dye formation is assumed.

H and O Agglutination in Typhoid and Vaccination.—Dulaney and Wikle state that, in the usual course of typhoid, both H and O agglutinins are produced, H designating the causative organism and O expressing the body's response to infection with a member of the enteric group of bacilli. H and O agglutinins to appreciable titer (1:500) are not demonstrated in unvaccinated persons suffering from nontyphoid diseases. O agglutinins seem definitely related to infection. Their demonstration in 1:500 to 1:1,000 is highly suggestive of infection by a member of the typhoid-paratyphoid group, since neither vaccine nor other febrile diseases stimulate to such titers. Typhoid vaccine stimulates the production of H agglutinins to high titers and O agglutinins to low titers (1:40 to 1:320). The ordinary Widal test detects only H agglutinins and does not differentiate between infection and vaccination. The use of preserved formaldehyde treated and alcoholized antigens offers an easy and standardized method of demonstrating H and O agglutinins. H and O agglutination is recommended

as a laboratory procedure in typhoid, though it could never have the validity of isolation of the causative organism.

Cutaneous Epithelium in Immunity Response.—Dienes points out that the epithelium of the skin is probably sensitized in allergic (contact) dermatitis and certain cases of drug idiosyncrasy. The hypersensitiveness of the epithelium develops by contact with the injurious agent in the same manner as the usual forms of hypersensitiveness. The tuberculin type of skin reactions presents many characteristics that suggest the direct participation of the cutaneous epithelium in the reaction. The characteristic necrosis in the reactions is often limited to the epithelium and a thin layer of connective tissue below it. The epithelium is involved early before the macroscopic reaction is strong. The epithelium is often infiltrated with polymorphonuclear leukocytes even in slight tuberculin reactions. The occurrence of necrosis is in no direct connection with the size of the reaction or with the general sensitiveness.

Journal of Nervous and Mental Disease, New York

77: 233-344 (March) 1933

- Experimental Convulsive Seizures. S. B. Wortis, New York.—p. 233.
- Hypermobility of Joints with Superimposed Postencephalitic Parkinsonism: Case. J. J. Michaels and Olive M. Searle, Ann Arbor, Mich.—p. 246.
- *Subacute Combined Degeneration of Spinal Cord with Symptom of Lhermitte in "Pernicious Anemia": Report of Case. D. M. Olkon, Chicago.—p. 256.
- Delayed Mental Disorders Following Cranial Traumatism and Their Psychopathologic Interpretation. A. Gordon, Philadelphia.—p. 259.
- Emile Kraepelin, Psychiatrist and Poet. Louise Brink and S. E. Jelliffe, New York.—p. 274.

Subacute Combined Degeneration of Spinal Cord.—Olkon reports a case of severe anemia in which the final diagnosis was the Lhermitte symptom with degeneration of the spinal cord. The patient complained of numbness of the hands and fingers, tingling of the legs and arms, and electrical shock-like sensations on moving the head downward and then upward. The gait was at times dragging and spastic. The tendon reactions were exaggerated, more on the left side. The Rossolimo sign was present. The plantar reflex was suggestive of the extensor type; while not marked, it was not a negative one, particularly on the left side. The vibration sense was lost, indicating changes in the posterior columns. The Rossolimo and Babinski signs were indicative of changes in the lateral columns, particularly the pyramidal tracts. The increased lymphocytic percentage might suggest a form of leukemia, but, lacking all corroborative observations, such a possibility is negated. Multiple sclerosis and tabes were ruled out by serologic and clinical studies. The diagnosis of subacute degeneration of the cord was based on the progressive onset of the paresthesias, the dysaesthesias, the loss of vibratory sensation in the limbs, the achylia gastrica, which still persists, the progressive weakness with little loss of weight, the peculiarly lemon-tinged skin, the tachycardia without definite clinical heart involvement, and the remission under liver therapy. The author concludes that the Lhermitte phenomenon is unusual in this connection.

Journal of Urology, Baltimore

29: 235-360 (March) 1933

- Estimate of Value of Urethrogram and Cystogram in Diagnosis of Prostatic Obstruction. E. G. Crabtree and M. L. Brodney, Boston.—p. 235.
- *Use of Diothane as Local Anesthetic in Urology. G. F. McKim, P. G. Smith, T. W. Rush and T. H. Rider, Cincinnati.—p. 277.
- *Traumatic Rupture of Urethra. C. Haines, Sayre, Pa.—p. 285.
- Study of Certain Urologic Complications Associated with Fractured Pelvis. E. W. White, Chicago.—p. 295.
- Study of Cause of Death in Genito-Urinary Disease: Preliminary Report. D. W. MacKenzie and M. I. Seng, Montreal, Canada.—p. 321.
- Blood Determinations of Ammonia and Sulphur, as Factors in Uremia of Urinary Obstructions. C. G. Bandler and J. A. Killian, New York.—p. 337.
- Congenital Absence of One Kidney: Report of Case Showing Aplasia of Secreting Portions of Uriniferous Tubules. W. C. Langston, Little Rock, Ark.—p. 355.

Anesthetic in Urology.—McKim and his associates used piperidinopropanediol diphenyl urethane hydrochloride for local infiltration anesthesia in concentrations varying from 0.25 to 1 per cent in a total of fifty-nine cases comprising fourteen cystotomies, six scrotal varicectomies, four operations for hydrocele, one epididymectomy, one orchidectomy, nine vasectomies, twelve urethral caruncles, one urethral varicotomy and eleven adult circumcisions. With one exception the results were

superior to those obtained in similar cases when using other local anesthetizing agents. The failure in a suprapubic cystotomy may have been due to a poor infiltration technic in an extremely nervous and apprehensive person. The authors injected 75 cc. of a 1 per cent solution of piperidinopropanediol diphenyl urethane hydrochloride but they made no subsequent check on the concentration of this solution. A light supplemental gas anesthesia permitted the satisfactory completion of the cystotomy. The amount of solution injected has varied with the type of surgical procedure contemplated. There has been no suggestion of toxic symptoms or local tissue irritation. A definite delay in the appearance of postoperative pain has been noted and the authors have been impressed with its mildness when it has appeared. They conclude that piperidinopropanediol diphenyl urethane hydrochloride commends itself to urologists because of its lack of local irritation, relatively high anesthetic properties, extremely low toxicity, prolonged anesthesia and ease of sterilization.

Traumatic Rupture of Urethra.—Haines feels that conservative treatment, especially in the hands of the less experienced, is a more satisfactory method of handling cases of incomplete or complete rupture of the urethra, whether in the bulbous portion or posterior to it, than is the more radical method advocated by many authors. He believes that each case is a case unto itself: no two cases will present the same identical injury, nor will any two show the same amount of shock or the same ability to combat it. Whether one relies on catheter drainage, suprapubic cystotomy, perineal section, end-to-end anastomosis, or a combination of all four depends entirely on the individual case, the length of time following the injury, and its severity. The condition of the patient should be the guiding factor in one's choice and method of treatment.

Kansas Medical Society Journal, Topeka

34: 83-122 (March) 1933

- Undulant Fever: Report of Cases Occurring in Kansas. E. G. Brown, Topeka.—p. 83.
Injection of Varicose Veins with Chemical Action. L. W. Angle, Kansas City.—p. 89.
Birth Injuries in Newly Born. J. A. Wheeler, Newton.—p. 93.
Cation Balance Theory of Hypertension. L. K. Zimmer, Lawrence.—p. 96.
Experimental Work on Dementia Praecox. M. Gerundo, Topeka.—p. 100.

Kentucky Medical Journal, Bowling Green

31: 125-172 (March) 1933

- Carotenemia or Xanthosis. W. U. Rutledge, Louisville.—p. 128.
Bronchiectasis: Report of Case. J. W. Scudder, Liberty.—p. 132.
Spinal Anesthesia in Conquest of Operative Pain. J. G. Sherrill, Louisville.—p. 133.
Multiple Malignancy: Exhibition of Specimen: Report of Case. L. Frank and A. J. Miller, Louisville.—p. 138.
Diagnosis and Treatment of Empyema of Childhood. C. Bailey, Harlan.—p. 139.
Stricture of Female Urethra. W. T. Briggs, Lexington.—p. 143.
Abscess of Lung and Its Treatment. O. O. Miller, Louisville.—p. 148.
Diverticulitis of Cecum: Report of Case. J. M. Frehling, Louisville.—p. 152.
The Cancer Patient. D. Y. Keith and J. P. Keith, Louisville.—p. 160.
Ringworm of the Feet. W. J. Young, Louisville.—p. 164.

Stricture of Female Urethra.—Briggs points out that stricture of the female urethra is common in patients presenting urinary symptoms. Its incidence as estimated by various authors shows a wide variation but is probably not less than 10 per cent. Aside from congenital narrowing of the meatus and the atresia of age, most strictures are the result of trauma, regardless of whether the trauma is mechanical, surgical, chemical or bacterial. The pathologic changes that take place in the urethra account for the local symptoms, which in many cases are severe enough to throw the whole body out of balance, especially the nervous system. Aside from prostatitis, prostatic abscess and extravasation of urine, the symptomatology is identical to that in the male. More than 50 per cent of the author's cases presented a bacterial cystitis, which probably accounted for some of the bladder symptoms, especially when the stricture was of wide caliber. Diagnosis of stricture at the meatus can often be made at a glance. In deeper strictures, large catheters or bougies of graduated sizes should be used. The author made the diagnosis in most of his cases by the routine use of a number 18 F. glass catheter. Except in resilient strictures requiring repeated dilations, the prognosis

is good; but complete recovery is rare. A stricture of the meatus should be cut, and the prognosis is unusually good. In deeper strictures, gradual dilation is the treatment of choice.

Laryngoscope, St. Louis

43: 153-232 (March) 1933

- Analysis of Seven Cases of Osteomyelitis of Frontal Bone Complicating Frontal Sinusitis. H. P. Mosher and D. K. Judd, Boston.—p. 153.
Circumscribed Arachnoid Cyst Giving Symptoms of an Acoustic Neuroma. W. V. Mullin, Cleveland.—p. 213.

Maine Medical Journal, Portland

24: 39-52 (March) 1933

- Peptic Ulcer. J. R. Hamel, Portland.—p. 43.

Medical Annals of District of Columbia, Washington

2: 47-70 (March) 1933

- *Aschheim-Zondek Test in Teratoma Testis. J. W. Lindsay, Washington.—p. 47.
Inadequate Sexual Function in the Male. W. R. Stokes, Washington.—p. 50.
Technic of Intravenous Injections. M. A. Selinger, Washington.—p. 54.
Trial Aspect of Malpractice Cases. C. S. Baker, Washington.—p. 58.

Aschheim-Zondek Test in Teratoma Testis.—Lindsay believes that the term "early" in its application to the diagnosis and treatment of malignant disease is given a new significance by the appropriate use of the Aschheim-Zondek test. The application of the Aschheim-Zondek test to the study of malignant disease, including teratoma testis, sets apart another group of tumors which may be followed by graphic methods. He believes that this delineation of special groups amenable to special methods of diagnosis and control constitutes the most important phase of the attack on the cancer problem while one awaits improvements in the recognized procedures already available. A most important factor in the value of the Aschheim-Zondek test is its clear demonstration of significant general principles in relation to the local manifestations of cancer. The evidence resulting from the work so far accomplished in connection with the Aschheim-Zondek test appears to offer a most hopeful outlook for the development of other biologic procedures which may broaden the field of precisely studied neoplasms and lay the foundation for further improvement in both diagnosis and therapy.

Medical Journal and Record, New York

137: 177-220 (March 1) 1933

- Allergy in General Practice. M. C. Harris, New York.—p. 177.
The United States Pharmacopeia. O. T. Osborne, New Haven, Conn.—p. 183.
Clinical Identity of Viscerospasms (Glénard's Disease) and Recessive Status Lymphaticus. H. A. Houghton, New York.—p. 184.
Preventive Medicine Versus Expectant Treatment. F. Jouard, New York.—p. 188.
Reticulo-Endothelial System. J. K. Narat, Chicago.—p. 189.

Michigan State M. Society Journal, Grand Rapids

32: 155-210 (March) 1933

- Some Modern Extensions of Beaumont's Studies on Alexis St. Martin: I. Thirst and Hunger. W. B. Cannon, Boston.—p. 155.
Relation Between Cerebral Diplegia and Birth Injury. T. D. Gordon, Grand Rapids.—p. 165.
Bronchial Asthma Due to Molds: Report of Case. B. A. Credille, Flint.—p. 167.
Treatment of Malignant and Premalignant Dermatoses. C. K. Hasley, Detroit.—p. 168.
The Thyrogenic Heart. J. L. Chester, Detroit.—p. 171.
Trend of Clinic Service in Detroit. D. J. Sandweiss, Detroit.—p. 177.
Intestinal Obstruction Due to Impacted Gallstone: Case Report. J. Johns, Ionia.—p. 180.
Some Notes on Sickness Insurance in Germany, 1932. W. A. Evans, Jr., Detroit.—p. 181.
Medical Participation: The Answer. L. O. Geib, Detroit.—p. 183.

Military Surgeon, Washington, D. C.

72: 189-276 (March) 1933

- Bacterial Warfare: Use of Biologic Agents in Warfare. L. A. Fox.—p. 189.
Inguinal Hernia. J. E. Goldthwait.—p. 208.
Relative Value of Roentgen Ray and Physical Signs in Diagnosis of Pulmonary Tuberculosis. W. R. Brookshier, Jr.—p. 211.
Health Conditions in the Philippine Islands. G. F. Lull.—p. 215.
Myiasis: Two Case Reports. S. Gayle, Jr.—p. 225.
Simple Auxiliary Lighting Outfit. H. F. Pipes.—p. 228.
American Military History. C. C. Benson.—p. 230.

New England Journal of Medicine, Boston

208: 573-618 (March 16) 1933

- Pathology of Chronic Myocarditis. S. Warren, Boston.—p. 573.
 Diagnosis of Chronic Nonvalvular Cardiac Disease (Chronic Myocarditis). H. A. Christian, Boston.—p. 574.
 Treatment of Nonvalvular Heart Disease of Middle and Old Age. H. Jackson, Boston.—p. 574.
 Treatment of Subacute Hemorrhagic Nephritis with Streptococcus Vaccines. C. L. Derick and J. P. O'Hare, Boston.—p. 578.
 *Comparative Value of Scratch and Intradermal Methods of Skin Testing in Asthma and Hay Fever of Children. E. S. O'Keefe, Lynn, Mass., and L. B. Burgin, Roxbury, Mass.—p. 582.
 Medicine, Ethics and Law. F. J. Cotton, Boston.—p. 584.

Skin Testing in Asthma and Hay Fever.—O'Keefe and Burgin state that, in children with hay fever, the cutaneous or scratch method gave a high proportion (91 per cent) of positive reactions. The intradermal test is only slightly superior to the scratch test. In children with asthma, however, scratch tests showed a low proportion (30 per cent) of positive results. The intradermal test brings the proportion of positive reactions much higher (87 per cent). The scratch test is reliable in the hay fever of children, but in the asthma of children it should be followed by the intradermal test in all cases in which the scratch test is negative.

208: 619-670 (March 23) 1933

- *Relation of Subacute and Acute Bacterial Endocarditis to Rheumatic Endocarditis: Study of Sixty-Six Cases with Necropsies. D. Davis and Soma Weiss, Boston.—p. 619.
 Appendicitis: Clinical and Pathologic Study. H. F. Howe, Boston.—p. 624.
 *Atropine as Diagnostic Aid in Appendicitis. F. M. Findlay, Boston.—p. 630.
 Better Gas Anesthesia: Carbon Dioxide Absorption Method. P. D. Woodbridge, Boston.—p. 632.
 Smallpox and Vaccination. S. B. Woodward, Worcester, Mass.—p. 641.
 Lymphosarcoma of Jejunum. E. H. Taylor, Pittsfield, Mass.—p. 642.
 *Ruptured Aneurysm of Hepatic Artery. E. H. Taylor, Pittsfield, Mass.—p. 644.
 Some Recent Researches in Epilepsy at Monson State Hospital. R. H. Guthrie, Palmer, Mass.—p. 646.

208: 671-720 (March 30) 1933

- Low Pericardiotomy for Acute Suppurative Pericarditis: Report of Two Cases and Twenty-Four New Cases from the Literature. P. E. Truesdale, Fall River, Mass.—p. 671.
 Role of Psychic Load in Recurrent Attacks of Gastroduodenal Ulcers. M. Einhorn, New York.—p. 681.
 Acute Hydrarnion Treated by Abdominal Puncture: Report of Case. B. Parvey, Boston.—p. 683.
 Arsphenamine in Treatment of Vincent's Angina. Elizabeth Ann Sullivan, Cambridge, Mass.—p. 686.
 Urethritis Due to Trichomonas. P. K. Jenkins, Miami Beach, Fla.—p. 687.
 Progress in Study of Cardiovascular Disease in 1931. S. McGinn and H. B. Sprague, Boston.—p. 691.

Relation of Bacterial Endocarditis to Rheumatic Endocarditis.—Davis and Weiss point out that the incidence of subacute and acute bacterial endocarditis among 5,215 consecutive necropsy examinations was 0.9 per cent and 0.4 per cent, respectively. A study of the interrelation between rheumatic and bacterial endocarditis revealed that approximately one case of subacute bacterial endocarditis occurred to every ten cases of rheumatic heart disease, and approximately one case of acute bacterial endocarditis to every twenty-five cases of rheumatic heart disease. One case of subacute bacterial endocarditis occurred to approximately every four cases of fatal rheumatic heart disease, and one case of acute bacterial endocarditis to approximately every nine cases of fatal rheumatic heart disease. Rheumatic heart disease occurred more frequently among women, but subacute and acute endocarditis superimposed on rheumatic heart disease developed considerably more often in men (ratio 3:1). The distribution of the degree of rheumatic valvular damage in the forty-seven cases of subacute bacterial endocarditis corresponded with that for 474 cases of rheumatic heart disease, indicating that the development of subacute bacterial endocarditis is independent of the degree of underlying rheumatic endocarditis. The apparent infrequency of advanced mitral stenosis with subacute bacterial endocarditis is explained by the fact that slight or severe "non-active" rheumatic valvular lesions predispose equally to the development of subacute bacterial endocarditis, and slight lesions are much more common than advanced ones. The same factor is held responsible for the relatively rare occurrence of severe congestive heart failure and auricular fibrillation in the course of subacute bacterial endocarditis. Instances of morphologic

evidence of varying grades of healing of the valves were encountered in subacute bacterial endocarditis.

Atropine in Appendicitis.—Findlay found the use of atropine to be of great value in differentiating the pain and tenderness due to acute appendicitis from that due to other conditions. In any suspected case of appendicitis, the patient, if an adult, is given $\frac{1}{400}$ grain (0.00065 Gm.) of atropine sulphate by mouth unless nauseated, in which case the drug is administered subcutaneously. A half hour later he is given an enema of 2 quarts of warm soap suds. After the enema is expelled the abdomen is carefully palpated and, if an area of distinct localized tenderness persists in the region of the appendix, a positive diagnosis should be made. If the enema has been only partially expelled and the entire cecum feels full or emits a gurgling sound on palpation, the atropine and enema may be repeated to ensure a thorough emptying of the large intestine. If either pain or local tenderness persists after this procedure, one is justified in making a diagnosis of appendicitis. The author has used this method for four years in a series of more than 300 cases of acute abdominal pain. Of the eighty-six patients operated on on the basis of the test, all but one have shown definite evidence of acute appendicitis. Acute appendicitis did not develop in any of the cases with negative observations in which operation was not performed. Patients suffering from food poisoning, infectious colitis and other forms of gastroenteritis have been given prompt relief from their discomfort by the administration of atropine, which has often been repeated two or three times.

Ruptured Aneurysm of Hepatic Artery.—Taylor reports a case of ruptured aneurysm of the hepatic artery in a man, aged 22, who entered the hospital suffering from a severe hemorrhage from the stomach and acute pain in the epigastrium. There was a history of some pain and distress in the epigastrium about a year before. Four months before admission he had an attack of acute pain in the right lower quadrant, followed by the removal of a gangrenous appendix. Otherwise his previous history was not important. He died eight months later. At necropsy there was no evidence of a malignant condition in any part of the body, or of ulceration in the stomach or duodenum, or of any way, macroscopically, by which bleeding could have occurred into the stomach. It is believed that because the aneurysmal sac communicated with the gallbladder the bleeding occurred into this organ and from there was transmitted to the duodenum and to the stomach.

New Jersey Medical Society Journal, Orange

30: 197-298 (March) 1933

- Tuberculosis in School Children. B. S. Pollak and B. P. Potter, Secaucus.—p. 197.
 Diagnosis of Pulmonary Tuberculosis in Infancy and Childhood. M. H. Bass, New York.—p. 202.
 Relation of Frequent Colds in Children to Diseases of Accessory Sinuses. C. G. Kerley, New York.—p. 209.
 Allergic Diseases in Children. S. Blaugrund, Trenton.—p. 211.
 *Treatment of Bone Tumors. M. Friedman, Newark.—p. 214.
 *Radiotherapy of Thyrotoxicosis. E. A. May, Newark.—p. 222.
 Cerebral Hemorrhage of the New-Born. L. Robbin, Newark.—p. 228.
 Radiographic Technic. C. F. Baker, Newark.—p. 230.
 Present Status of Poliomyelitis from Neurologic Point of View. C. C. Beling, Newark.—p. 241.
 Physiotherapy, Use of Respirators and Orthopedic Treatment, in Poliomyelitis. B. F. Buzly, Camden.—p. 244.
 Early Diagnosis and Treatment of Acute Anterior Poliomyelitis. L. C. Rosenberg, Newark.—p. 248.

Treatment of Bone Tumors.—Friedman states that, of the eight types of primary bone tumors, four are radiosensitive in varying degrees. They are, in the order of their radiosensitivity: endothelial myeloma, multiple myeloma, giant cell tumor and chondroblastic osteogenic sarcoma. This fact is helpful when employed as a therapeutic test to aid diagnosis in a doubtful case. Radiation therapy should be discontinued in favor of surgery if definite results are not obtained in six weeks. Malignant bone tumors are curable under proper therapy. The more differentiated the tumor (i. e., sclerosing osteogenic sarcoma), the higher is the percentage of five year cures. The more undifferentiated the tumor (i. e., osteolytic osteogenic sarcoma), the lower is the percentage of five year cures. The scope of radium and roentgen therapy in the treatment of bone tumors is still to be accurately delineated. No osteogenic sarcoma of any type should ever be curetted.

Radiotherapy of Thyrotoxicosis.—According to May, radiotherapy in the different types of hyperthyroidism should be recognized as one of the most powerful remedies. In plain hyperthyroidism and small toxic goiters it is superior to other methods. It is also indicated in cases of poor surgical risk. The mortality is less than 1 per cent and recurrences are fewer than with surgery. Surgery should be resorted to in acute cases of large toxic goiters with impending heart failure and in persons more than 60 years of age. Preoperative roentgen treatments will lessen the surgical risk and prepare the patient for thyroidectomy better than ligation of the blood vessels, in all cases in which surgery is given preference. Previous irradiation does not render the operation more difficult. Recurrences after operation respond well to radiotherapy. Of 160 patients treated with radiotherapy alone, 132 (82.2 per cent) were cured; 25 (15.6 per cent) were much improved, and 3 (1.9 per cent) were unimproved. Of these, 6 patients included (5 as improved and 1 as unimproved) with large toxic goiters were later operated on and are now cured.

New Orleans Medical and Surgical Journal

85: 645-722 (March) 1933

- Expert Medical Witness. S. C. Barrow, Shreveport, La.—p. 645.
Treatment of Toxic Goiter by Means of Radiation Therapy. L. J. Menville, New Orleans.—p. 648.
Cancer Problem. J. M. Martin, Dallas, Texas.—p. 654.
The Typhoid Carrier. N. C. Knight, Indianola, Miss.—p. 662.
Oral Conditions Which Physician Should Note. F. J. Wolfe, New Orleans.—p. 665.
Some Observations on Inaugural Symptoms of Hypertension. S. M. Copland, New Orleans.—p. 668.
History of Bubonic Plague and Personal Experiences. H. W. Knight, New Orleans.—p. 672.

Ohio State Medical Journal, Columbus

29: 145-208 (March 1) 1933

- *Nutritional Anemia. E. Scott and C. J. Delor, Columbus.—p. 165.
Estimation of Disability from an Orthopedic Standpoint. W. G. Stern, Cleveland.—p. 170.
Management of Acute Abdomen, with Especial Reference to Use of Spinal Anesthesia. R. C. Austin and H. H. Wagner, Dayton.—p. 176.
*Graphic Methods of Evaluating Remissions in General Paralysis. R. E. Stout, Cleveland.—p. 179.
Imperforate Anus. G. M. Curtis and F. E. Kredel, Chicago.—p. 183.

Nutritional Anemia.—Scott and Delor present experimental proof that the nutritional anemia of the white rat may be relieved by either the feeding of milk from cows fed on a diet consisting of a warm malted and hydrolyzed hay and grain mixture to which a complex formula of mineral was added, or by the addition of an iron and copper free extract of alfalfa or of a liver oil high in vitamin A to the deficient milk diet. This growth promoting factor is absent or insufficient in the milk of cattle fed on the usual winter dairy ration. This factor, when present in milk following the special feeding of the cattle, is thermolabile. Further evidence has been obtained of the intimate relationship existing between the feed of the cow and the hematopoietic factor or factors in the milk. Milk, to be of the highest nutritive value, must contain the factors resulting from the presence of the vegetable pigments in the food of the cow. The rapidly growing belief in the close association between the vegetable pigments carotene and chlorophyll and vitamin A or its associated factors is strengthened by these experiments.

Evaluating Remissions in Dementia Paralytica.—Stout made a study of the speech, handwriting and tremor of 110 dementia paralytic patients. He noted the rate and degree of improvement following malaria, and the degree of synchronism between this improvement and improvement in the mental and emotional status. Improvement in the objective neurologic signs of dementia paralytica, especially in those due to cortical disease, is a most reliable sign of improvement in the physiologic state of the cortex. Improvement in dysarthria, in involuntary movement, and in the mental and emotional status of dementia paralytica patients becomes evident concurrently following therapeutic malaria. The spontaneous handwriting of these patients discloses not only involuntary movement but also by its content incoordination of thought. Improvement both in form and in thought content occurs following malaria and is evidence of clinical remission. By means of Whipple's steadiness tester, involuntary movements can be recorded and graphically compared. This affords a reliable objective test

for the degree of recovery. Advanced optic atrophy and profound dementia have been the only contraindications to this type of examination.

Public Health Reports, Washington, D. C.

48: 183-210 (Feb. 24) 1933

- Quantitative Determination of Quartz ("Free Silica") in Dusts. A. Knopf.—p. 183.
48: 211-242 (March 3) 1933
Seasonal Variation of Average Growth in Weight of Elementary School Children. C. E. Palmer.—p. 211.
48: 263-282 (March 17) 1933
Rocky Mountain Spotted Fever: Investigation of Sexual Transmission in the Wood Tick Dermacentor Andersoni. C. B. Philip and R. R. Parker.—p. 266.
48: 283-318 (March 24) 1933
Causes of Illness in Nine Thousand Families, Based on Nation Wide Periodic Canvasses, 1928-1931. S. D. Collins.—p. 283.

South Carolina Medical Assn. Journal, Greenville

29: 27-50 (Feb.) 1933

- Use of Willow Bark in Treatment of Malaria: Preliminary Report. W. H. Zeigler, Charleston.—p. 30.
Urethral Stricture in the Female. L. P. Thackston, Orangeburg.—p. 32.
Some Newer Nutritional Facts and Theories: Their Correlation with Otolaryngology. J. W. Jervey, Greenville.—p. 34.
Disease of Rocky Mountain Spotted Fever Type Identified in Marion County (S. C.): Case Reports. B. M. Montgomery, Marion.—p. 40.
29: 51-78 (March) 1933
Training of Doctors in South Carolina. K. M. Lynch, Charleston.—p. 55.
Acute Poliomyelitis. W. Weston, Jr., Columbia.—p. 58.
The Decompensated Heart. H. Smith, Greenville.—p. 60.
Intra-Abdominal Trauma from Nonpenetrating Wounds. D. Jennings, Bennettsville.—p. 63.
Urography in Uterine Anomalies. R. Doughty and M. Mosteller, Columbia.—p. 66.
"Hay Fever" Plants of Charleston, S. C. and Vicinity. J. H. Hoch and J. I. Waring, Charleston.—p. 69.

Southwestern Medicine, Phoenix, Ariz.

17: 77-110 (March) 1933

- Surgical Considerations of Gallbladder Disease. W. L. Reid, Phoenix, Ariz.—p. 77.
Some Observations on Senile Cataract. S. A. Schuster and F. P. Schuster, El Paso, Texas.—p. 80.
Research and Cancer Progress. W. B. Coffey, San Francisco.—p. 83.
Biologic Explanation of Cancer: Etiology, Prevention and Treatment. O. S. Fowler, Denver.—p. 87.
Radium Treatment of Carcinoma of Prostate and Bladder. D. M. Davis, Phoenix, Ariz.—p. 91.
Psoriasis Rupoides with Carcinoma. E. W. Johns, Albuquerque, N. M.—p. 95.
*Allergy in Tuberculosis: Study of Twenty Cases. B. Thompson, Tucson, Ariz.—p. 100.

Allergy in Tuberculosis.—In an attempt to study the part allergy plays in tuberculosis, Thompson tested the skin in twenty unselected cases of active pulmonary tuberculosis by the cutaneous and the intradermal method, utilizing extracts of 140 different antigens. The list of allergens used in testing comprised every known protein of possible allergic significance which may have come in contact with the body tissues of these patients by ingestion or inhalation. Of the twenty patients, fourteen retrogressed and six remained clinically stationary during the six-months period prior to the beginning of attempted desensitization, under a regimen of rest and of hygienic, dietary and conservative symptomatic treatment. On roentgenographic and physical examination, twelve patients showed advanced involvement with cavitation, two advanced involvement without cavitation, four moderately advanced disease, and two indications of incipient tuberculosis. Of these patients, seven had been diagnosed tuberculous for a period of five years or more, eleven for a period of from one to five years, and two for a period of less than one year. Of the twenty patients treated by antigen inoculation, eleven showed symptomatic improvement in an average period of 14.2 days, and nine were relieved of symptoms in an average period of 8.5 days. From this study the author concludes that chronic pulmonary tuberculosis may be a scavenger infection, progressing only in tissues rendered hypersensitive and inflamed by a variety of extrinsic and intrinsic allergens, or that tuberculosis may be a primary infection of the tubercle bacillus, producing a hypersensitivity not only to the tubercle bacillus itself but to other allergens, and that the repeated inoculation of these allergens, by crossed reaction, may produce a tissue immunity against the tuberculous

infection. The author's experiment suggests a mode of investigation and treatment in cases of pulmonary tuberculosis which have failed to respond to the time tested conservative methods. Its trial does not contraindicate the continuance of conventional therapy. By relieving irritative symptoms, with the object of putting the chest at rest, it may, however, be possible to shorten the period of tuberculous activity.

Tennessee State Medical Assn. Journal, Nashville

26: 93-136 (March) 1933

- Free Clinic Problem. H. B. Everett, Memphis.—p. 93.
Tentative Program in Public Health. A. B. McCreary, Memphis.—p. 95.
Report of Case of Color Hearing and Some Important Advances in Medicine, Which Have Come Since My Graduation Fifty-Six Years Ago. J. L. Minor, Cordova.—p. 104.
Differential Diagnosis and Surgical Management of Hyperthyroidism. W. O. Floyd, Nashville.—p. 108.
Relief of Intractable Pain. E. F. Fincher, Jr., Atlanta, Ga.—p. 112.
Correlation of Clinical and Roentgen-Ray Findings in Chest Conditions of Children. S. W. Coley and F. T. Mitchell, Memphis.—p. 116.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

41: 119-182 (March) 1933

- Deferred Operation in Treatment of Periapical Abscess. K. A. Meyer, Chicago.—p. 119.
Treatment of Pulmonary Abscess. C. A. Hedblom, Chicago.—p. 125.
Ascending Infection to Kidney: III. Experimental Study. W. J. Carson, Milwaukee.—p. 132.
Hemorrhage After Operations on Biliary Tract. W. T. Coughlin, St. Louis.—p. 140.
Xanthomatosis or Schüller's Disease with Cranial Defects. P. A. Bendixen, Davenport, Ia.—p. 147.
Intraperitoneal Rupture of Urinary Bladder Associated with Fracture of Pelvis: Report of Two Cases. J. P. Henderson, Kansas City, Mo.—p. 153.
*Simple Inflammatory Ulceration and Stricture of Jejunum: Report of Case Successfully Treated by Operation. G. W. Nagel, San Francisco.—p. 159.

Inflammatory Ulceration and Stricture of Jejunum.—Nagel reports a case of stricture of the intestine with granulomatous ulceration and perforation and states that the actual causative agent in the nonspecific variety of primary jejunal ulcer has not been determined. The primary event that has brought many of these cases to light has been an obstruction of the intestine with ulceration and perforation above the stricture. Pressure necrosis and ulceration commonly occur above intestinal strictures, whatever the cause of the stricture may be. In the author's case, the large ulcer and the necrotic intestine resulting in perforation appear to be this type of lesion. Stricture of the small intestine, often double, has been observed as a result of temporary incarceration in a hernial sac. Although his patient had been operated on previously for bilateral inguinal hernia, there was no history suggesting such a causative factor; in any event, the location of the strictures high in the jejunum appear to rule out this possible mode of origin. The most likely cause of these strictures seems to be the contraction of cicatricial tissue produced in healing ulcers. The possibility of congenital strictures playing a part in the cause of these lesions must also be considered. Congenital points of narrowing of varying degree are occasionally found in the intestinal tract, especially in the small intestine. Whether or not a stricture of the intestine produces abnormal symptoms depends on the degree of the stricture and the extent and nature of the primary lesion. Congenital stenoses of quite marked degree frequently cause little or no apparent trouble. The author believes that it is possible that the strictures in his case were congenital, as the inflammatory reaction at these points was not marked.

Wisconsin Medical Journal, Madison

32: 145-212 (March) 1933

- Some Recent Advances in Medical Sciences (Bacteriology and Immunology as They Apply to Clinical Practice). W. D. Stovall, Madison.—p. 153.
Acute Leukopenic Leukemia and Its Differential Diagnosis. C. H. Watkins, Rochester, Minn.—p. 156.
Leukopenic Syndrome. F. Madison, Milwaukee.—p. 160.
Relative Position of Radiologist in Medical Profession. J. N. Sisk and L. V. Littig, Madison.—p. 164.
Jejunal Feeding in Treatment of "Stubborn" Duodenal Ulcer; and Other Indications for Jejunostomy. E. H. Mensing, Milwaukee.—p. 168.
Report of an Extreme Cleft of Hard and Soft Palate Closed with the Use of Author's Tension Plates. M. N. Federspiel, Milwaukee.—p. 172.
Subacute Bacterial Endocarditis: Case Report. C. E. Constantine, Racine.—p. 177.
Stillbirths in Wisconsin for 1930. L. W. Hutchcroft, Madison.—p. 179.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45: 133-178 (April) 1933

- Investigation of Alleged Tuberculous Etiology of Erythema Exudativum Multiforme (Hebra). R. Hallam and J. W. Edington.—p. 133.
Juvenile Acanthosis Nigricans: Case. S. W. Smith.—p. 142.
New Phase in Early Syphilis. A. Whitfield.—p. 145.

British Journal of Ophthalmology, London

17: 129-192 (March) 1933

- Ophthalmic Lesions of Botulism: Additional Notes and Research. C. M. Swab and H. F. Gerald.—p. 129.
Localization on Fundus; Contributions on Meridian Faults; New Localizing Perimeter. M. Klein.—p. 145.
Congenital Cataract Showing Unusual Features: Case. D. J. Weed.—p. 158.
Glaucoma: Clinical Note. E. E. Maddox.—p. 161.
*Series of One Hundred Cases of Hypopyon Ulcer, with Especial Regard to Method of Treatment. A. C. Reid.—p. 162.
Marked Papilledema in Pulmonary Embolism. A. J. Cameron.—p. 167.

Treatment of Hypopyon Ulcer.—Reid presents a series of 100 cases of hypopyon ulcer comprising only those cases which, when first seen by him, presented a hypopyon visible to the naked eye. He has come to the conclusion that the most satisfactory method of treating all hypopyon ulcers at whatever stage they present themselves is with one or more applications of a cautery of the Wessely type, along with certain adjuvant methods. The author has all patients presenting ulcers put to bed, even mild cases. He insists that the patient lie on his back, using but one pillow. The patient is instructed to bathe the eye freely every half hour during the day, and as often at night as he wishes, with a 1:10,000 solution of mercuric chloride. Drops of mild silver protein, 20 per cent, are instilled by a nurse every two hours. This is kept up for forty-eight hours. If there is no advance of the ulcer, the patient is allowed to sit up in bed, followed by getting up in the ward in another forty-eight hours; and two days later, if there is no advance and the surface takes the silver stain all over, the patient is sent home. The most favorable cases thus demand six days in the hospital. Corneal section was reserved for the worst cases, after other methods had failed. The author adopted this method in only two patients after the Wessely cautery.

British Journal of Physical Medicine, London

7: 213-232 (March) 1933

- *Tar and Ultraviolet Radiation in Treatment of Psoriasis. W. H. Goeckerman.—p. 215.
Some Forms of "Sciatic" Pain: Their Diagnosis and Treatment. G. L. K. Pringle.—p. 218.
Treatment of Expectant Mothers by Ultraviolet Irradiation. N. K. Gibbs.—p. 220.
Some Aspects of Climatology and Their Bearing on Rheumatic Disease. C. Buckley.—p. 221.
The Naheim Treatment in Cardiovascular Disease in England. K. Playfair.—p. 225.

Radiation in Treatment of Psoriasis.—Goeckerman believes that the symptomatic treatment of psoriasis by the use of crude coal tar and ultraviolet irradiation is the most effective method of treatment. It is probable that the superior results are effected by substances produced by photochemical changes in the tar. Removing the psoriatic patches by this method has had a striking symptomatic effect on an associated arthritis in about 50 per cent of the cases treated. Exfoliative dermatitis secondary to psoriasis responds as well to this method of treatment as typical psoriasis. This complication usually develops as the result of intercurrent infection, arsenic preparations internally, or irritants locally. The results of treatment by tar and ultraviolet irradiation do not warrant the assumption that the skin has undergone a form of degeneration in this form of exfoliative dermatitis. Under hospital conditions, an ointment containing from 1 to 5 per cent of crude coal tar is applied about one-eighth inch (3 mm.) thick to the various patches, whether large or small. The ointment used by the author consists of an incorporation of the proper percentage of crude tar in about the equivalent of Lassar's paste without salicylic acid. The ointment remains in contact with the patches until the next day. The excess of ointment is then removed with olive oil; a thin film, enough to look like a

brown stain, is purposely allowed to remain. These patches are then exposed to quartz lamp radiation, beginning with a small dose to avoid any reaction. The ointment is reapplied and the exposure given daily. As the patient becomes accustomed to the exposure, the dosage may be rapidly increased. Gradual tanning is the object desired. Following daily exposure to the light, the patient may take a soap and water, or, if his skin is sensitive, an oatmeal and soda bath. He is then permitted to spend several hours in comfort, before the procedure is repeated. Mild conditions clear up in from two to three weeks.

British Medical Journal, London

1: 443-498 (March 18) 1933

- Source of Modern Medicine. A. MacPhail.—p. 443.
Treatment of Burns and Scalds, with Especial Reference to Use of Tannic Acid. P. H. Mitchiner.—p. 447.
Recent Conceptions of Bright's Disease and Its Treatment. W. MacAdam.—p. 452.
Primary Pneumonia: Two-Year Survey of Cases Treated Nonspecifically. H. Joules.—p. 455.
Treatment of New Growths by Fluorescein and Roentgen Rays. H. A. Colwell.—p. 457.

1: 499-548 (March 25) 1933

- Changes in the Character of Diseases. H. Rolleston.—p. 499.
Neuroparalytic Accidents Complicating Antirabic Treatment. G. Stuart and K. S. Krikorian.—p. 501.
The Working Capacity of the Consumptive. J. B. McDougall.—p. 504.
Prognosis in Pulmonary Tuberculosis. W. Stobie.—p. 507.
Phthisis in Adolescence and Early Adult Life. W. B. Wood.—p. 509.
Serum Therapy in Poliomyelitis. Jean Macnamara.—p. 526.

Neuroparalytic Accidents in Antirabic Treatment.—Stuart and Krikorian state that paralytic accidents are a rare complication of antirabic treatment but exhibit a certain periodicity in their occurrence. Since 1928 the condition has been observed in Palestine on five occasions: the three patients showing Landry's syndrome died and the two with dorsomyelitis recovered. The incidence is now, for the first time, recorded among members of the age group from 0 to 5 years. The proportion of cases to the number of treated persons varies according to the method of vaccination employed. In this connection, statistics have proved the superiority of phenolized vaccines over all others, but now the safeguards thereby afforded are shown to be far from absolute. The histopathology now described does not agree with that previously published. In the authors' cases the microscopic appearances of the brain and the spinal cord showed little more than varying degrees of degenerative changes in the nerve cells, together with considerable vascular congestion and occasional hemorrhage. Evidence of perivascular demyelination or of perivascular cuffing was altogether wanting, and therefore the type of paralytic accident represented by their cases cannot, on histologic grounds, be included among the group of diseases termed "acute disseminated encephalomyelitis" or "acute perivascular myelinoclasia." Further, the absence of Negri bodies and of perivascular and periganglionic infiltrations differentiates the condition from rabies. The authors again advance a cytotoxin rather than a virus theory of origin. Thus, in the basic nerve substance of all antirabic vaccines there seems to exist some deleterious component which, though adversely affected by various physical and chemical agencies, is still capable, in peculiarly susceptible persons, of producing neuroparalytic disorders.

Edinburgh Medical Journal

40: 113-196 (March) 1933

- Bronchial Asthma and Pulmonary Tuberculosis. W. E. Foggie.—p. 113.
Abdominal Glandular Tuberculosis: Study, with Especial Reference to Fecal Fat Content. W. H. Morton.—p. 117.
Results of Examination for Tubercle Bacillus of One Thousand and Five Hundred Samples of Milk in Dundee. W. H. Morton.—p. 124.
Lung Collapse Therapy. H. M. Davies.—p. 127.
Robert Koch's Discovery of Tubercle Bacillus: Some of Its Implications and Results. R. Philip.—p. 146.
Our Progress in Prevention and Treatment of Tuberculosis. G. L. Cox.—p. 158.
Treatment of Tuberculous Disease of Kidney from the Standpoint of the Surgeon. H. Wade.—p. 166.
Seasonal Variation in Tuberculosis, as Illustrated by Study of Pus Formation in Tuberculous Glands. J. C. Simpson and C. Clayton.—p. 176.
Orientation of Medical Education. A. Miles.—p. 183.

Tuberculosis and Tuberculous Glands.—From a series of 221 patients, divided into twelve groups according to the month of the year in which pus was evacuated, Simpson and

Clayson observed that there is a strongly marked tendency to the seasonal occurrence of pus formation in tuberculous lesions, as exemplified by a study of glandular tuberculosis. The maximum tendency to pus formation is in the month of March, while the minimum is in August, September and October. This seasonal variation is as strongly marked—if not more so—in the recurrences of the disease as it is in the initial change from caseation to pus formation. There is no appreciable difference between the tendency to pus formation, observable in patients treated at a sanatorium, and that noted in patients residing at home and treated at outpatient clinics.

Indian Medical Gazette, Calcutta

68: 125-184 (March) 1933

- Making Epidemic Forecasts. L. Rogers.—p. 125.
Malignant Disease in the Punjab. V. Nath, J. Lal and J. Singh.—p. 127.
Note on Use of Marmite in Tropical Macrocytic Anemia, Including Pernicious Anemia of Pregnancy. Lucy Wills.—p. 133.
Intensive Iron Treatment of Anemia in a Tea-Garden Labor Force. R. Bhattacharyya.—p. 134.
Note on Prevalence of Lead Poisoning in India. R. H. Candy.—p. 136.
New Corneal Scraper for Tattooing. J. Hansraj.—p. 137.
Fatal Flexner Bacillus Infection in Anthropoid Ape (*Hyllobates Hoolock*). B. M. Das Gupta.—p. 138.
Urobilinuria and Its Importance in Malaria. J. Lal and J. Singh.—p. 139.
Life Tables for Bengal: Notes on Method of Preparation of Life Tables. H. P. Chaudhuri.—p. 141.

Urobilinuria and Malaria.—Lal and Singh point out that the four important conditions in the tropics in which urobilin is present in large amount are, in the order of their importance, malarial fever, lobar pneumonia in the resolution stage, internal hemorrhage, and cholecystitis. The presence of a large amount of urobilin in the urine differentiates cholecystitis from kidney lesions, appendicitis and other abdominal conditions. The condition in which urobilin is present in the largest amounts is malarial infection. In the 296 cases in which specimens of urine were received along with blood films, malarial parasites and urobilin were present in 85; malarial parasites were present but urobilin was absent in 11; no malarial parasites were observed but urobilin was present in 40, and no urobilin or malarial parasites were found in 160. In the forty patients in whom no malarial parasites were found but the urine was strongly positive for urobilin, quinine was given in curative doses for the fever and in all such cases the fever yielded to the drug.

Irish Journal of Medical Science, Dublin

No. 87: 97-144 (March) 1933

- In the Days of Vesalius. W. Doolin.—p. 97.
Modern Developments in Cataract Extraction. M. H. Whiting.—p. 111.
Notes on Hemophilia, with Recent Experiments on Clotting Time and Their Influence on Treatment. E. T. Freeman.—p. 122.
Some Notes on Uremia. G. Bewley.—p. 129.

Journal Obst. and Gynec. of Brit. Empire, Manchester

40: 209-396 (April) 1933

- Aid in Treatment of Toxemia of Pregnancy. A. Daly.—p. 209.
Influence of Pituitary Gland on Parturition. S. Morris.—p. 230.
Prolonged First Stage of Labor. R. C. Brown.—p. 240.
Consideration of Treatment of Pregnancy Complicated by Cardiac Disease. H. R. MacLennan.—p. 251.
Pathology of Ovarian Tumors. W. Shaw.—p. 257.
Value of Limited Bacteriologic Control in Prophylaxis of Puerperal Sepsis. Joan K. Rose.—p. 273.
Excretion of Sodium Thiosulphate During Uncomplicated Human Pregnancy, Following its Intravenous Administration in Large Amount. A. Bolliger and M. S. S. Earlam.—p. 289.
Tuberculous Infection of Uterine Endometrioma. Clara Stewart.—p. 299.
Traumatic Purpura Occurring During Labor. Jane B. Stubbs and H. E. Martin.—p. 302.

Treatment of Toxemia of Pregnancy.—In treating toxemias of pregnancy, it has been Daly's object to raise the plasma bicarbonate, to increase the calcium content of the serum, and also, in the severe cases, to obtain a relatively rapid action by the intravenous introduction of a suitable diuretic. In all cases of albuminuria, preeclamptic, severe and mild, he administers an alkaline compound tablet orally three times a day. The tablet is composed of 40 grains (2.6 Gm.) of potassium citrate, 20 grains (1.3 Gm.) of sodium bicarbonate, and $7\frac{1}{2}$ grains (0.5 Gm.) of calcium sodium lactate. In cases of severe albuminuria, in addition to the oral administration of the tablet, the author administers intravenously one ampule of 20 cc. of a sterile aqueous solution of 20 grains (1.3 Gm.) of sodium bicarbonate and 20 grains of the diuretic sodium

acetate, and one ampule containing $5\frac{1}{2}$ grains (0.37 Gm.) of anhydrous calcium acetate, 1 minim (0.06 cc.) of glacial acetic acid and enough sterile distilled water to make 2 cc. For intravenous administration the contents of the alkali ampule are added to about 140 cc. of sterile water, the 2 cc. of the calcium ampule is then added and the volume made up to 170 cc. with sterile water, the resulting isotonic solution being introduced by the funnel and tube. The effect of this treatment has been dramatic in many instances. The albumin reading falls rapidly in all cases and is almost invariably small by the third or fourth day; in many cases the urine is clear, and remains clear. If the albumin in the urine rises again, as may occur in the more severe cases, another intravenous injection of the alkali in dilution, followed by the calcium salt, is indicated. The author concludes that his treatment has the advantage over other methods in that the patients are allowed an ordinary diet, thus conserving their energies until the termination of the pregnancy. The treatment also has the advantage that the loss of child life is greatly diminished, for his investigations show that only 2 per cent of cases required induction, whereas, in the control series treated on the usual lines, labor was induced in 66 per cent of patients because of failure to respond to the treatment. The total number of cases in the control series was 131. In addition, only 11 per cent of births were premature, whereas 63 per cent in the control series terminated prematurely.

Bacteriologic Control in Puerperal Sepsis.—Rose states that a study of the various groups of cases shows that there is an increased morbidity rate for all groups having hemolytic streptococci in the fauces or vagina during the lying-in period. In throat infections, the increase is due chiefly to diseases of the respiratory system and to mastitis. In vaginal cases, morbidity is usually of genital origin. Hemolytic streptococci may in some cases be normal inhabitants of the lower vagina in the pregnant woman, but when they are present during the last month they should be regarded as a potential danger. Hemolytic streptococci were found in the genital passages in 6.8 per cent of hospital patients and in 9.6 per cent of district patients. Streptococcal infection giving rise to pyrexia occurred in 0.6 per cent of hospital cases and in 1.4 per cent of district cases. A knowledge of the bacteriology of the genital tract, especially during the last month of pregnancy and in the early days of the puerperium, is of value, as special precautions may be adopted if pathogenic organisms are present. Preventive measures should include treatment of positive fauces in patients and attendants, treatment of positive vaginas during the late antenatal period and throughout labor, also all measures that can be devised for protecting the patient from contact with acute or subacute infection at home or in the hospital. The technic of the obstetric attendant should be adequate to prevent the risk of contagion from all sources, including droplet infection. Owing to the bacteriologic examination, it has been possible to reduce the risk of puerperal infection in 3,000 consecutive cases by 75 per cent. Pyrexia due to *Streptococcus hemolyticus* has not entirely disappeared, but there have been few severe cases and, when isolated cases have occurred, there has been no spread of infection. It would appear, therefore, that the risk of contagion which is commonly associated with the congregation of patients in institutions has in the past three years been practically eliminated.

Tuberculous Infection of Uterine Endometrioma.—Stewart reports a case of tuberculosis in association with endometriosis uteri. The case is of particular interest in that there was a discrete nodule of adenomyoma as well as a general diffuse endometriosis, and that the two lesions were the site of active tuberculosis. The adnexa were not examined microscopically. Only those of one side were removed at the operation and they appeared to be normal on macroscopic examination, while the tuberculous lesion of the uterus was unsuspected until the specimen had been submitted to microscopic examination. In the clinical history there was no indication of the time of infection. As often happens, the symptoms had apparently no reference to the tuberculosis. Pain associated with and between menstruation was the only symptom so far as the patient could recall.

Traumatic Purpura.—Stubbs and Martin observed a case of traumatic purpura occurring during parturition, in which systolic and diastolic blood pressures were 100 and 65 mm.

of mercury, respectively. The blood count was as follows: red cells 3,568,000, white cells 7,000, hemoglobin 55 per cent, color index 0.75, polymorphonuclear leukocytes 70 per cent, lymphocytes 25 per cent, large mononuclears 3 per cent, eosinophils 1 per cent, and mast cells 1 per cent. The blood platelets were plentiful. The bleeding time estimated by Duke's method was four minutes. The blood coagulation time was not increased. The authors believe that their case differs markedly from those of purpura in pregnancy previously reported. Except for some hyperemesis occurring early, the pregnancy, labor and puerperium were normal, and a healthy child was obtained. The eruption was unaccompanied by any disturbance of the patient's general health and occurred during labor. The rash was distributed over the upper part of the body, which is unusual. The peculiarities which might predispose to traumatic purpura are that the prolonged bleeding time and the history of purpuric spots occurring during the hyperemesis of a previous pregnancy suggest that the patient had a hemorrhagic diathesis; the long standing mitral stenosis would tend to increase the intravenous and intracapillary pressure, and the large doses of potassium citrate that had been administered for four months prior to the labor might influence the coagulability of the blood.

Journal of Physiology, London

77: 319-458 (March 15) 1933

- Central and Reflex Mechanism of Panting. M. Hammouda.—p. 319.
Lapicque's Theory of Curarization. W. A. H. Rushton.—p. 337.
Effect of Insulin on Respiratory Quotient, Oxygen Consumption, Sugar Utilization and Glycogen Synthesis in Normal Mammalian Heart in Hyperglycemia and Hypoglycemia. E. W. H. Cruickshank and C. W. Startup.—p. 365.
Excretion of Protein by Mammalian Kidney. L. E. Bayliss, Phyllis M. Tookey Kerridge and Dorothy S. Russell.—p. 386.
Portal Circulation: II. Action of Acetylcholine. J. McMichael.—p. 399.
Nervous Control of Caudal Region of Large Bowel in Cat. R. C. Garry.—p. 422.
Influence of Oxygen Pressure on Metabolism of Isolated Cold-Blooded Heart. A. J. Clark, R. Gaddie and C. P. Stewart.—p. 432.
Gastric Fibers of Vagus Nerve. B. A. McSwiney and W. R. Spurrell.—p. 447.

Journal of Tropical Medicine and Hygiene, London

36: 65-80 (March 1) 1933

- **Bacterium Dispar* (Andrewes) and Its Association with Dysentery. W. L. Forsyth.—p. 65.
Metadysentery Observed in Eritrea: Cases. A. Marmo.—p. 69.

Bacterium Dispar and Dysentery.—In the past two years, Forsyth succeeded in collecting and investigating twenty-one strains of *Bacillus dispar* isolated from the intestinal tract in cases of clinical dysentery. The author fed rabbits with this organism without their showing evidence of infection. Young, recently isolated strains have been introduced by rubber catheter in the rectum of rabbits without any harmful result to the animals. A monkey (*Macacus rhesus*) was fed each morning on vegetable impregnated with young broth culture and on sugar soaked in the culture, before other food was allowed. This was continued for a fortnight without signs of enteritis intervening. The stools of the animal were sown on three occasions on MacConkey's medium and yielded large crops of colonies of *Bacillus dispar*. A laboratory attendant indulged in some of the vegetable soaked in culture without further incident. It has proved a good antigen on injection into a patient for the clinical purposes of protein shock. The author states that some observers have, by parenteral, usually intravenous, introduction of living culture, shown selective inflammation of the mucosa of the large intestine in the rabbit. It will be admitted by those who have had considerable experience of this maneuver that enteritis does not always follow the injection of what is undoubtedly a living dysentery antigen. It is not rare to find the ureters of the animal ballooned with blood produced by an acute hemorrhagic nephritis. However, certain strains of Flexner's bacillus may, in small doses, produce on occasion enterotropism of the large intestine, as evidenced by the accumulation of blood and mucus therein and the presence of small ulcers or areas of hemorrhage. In regard to *Bacillus dispar*, the author has not been able to produce evidence of inflammation of the lower intestine in the rabbit. Doses of from one twelfth to one half of an agar slope in saline solution have been injected into the ear vein of a rabbit, resulting in the death of the animal at periods varying with the dose, one sixth of a slope killing the rabbit in forty-eight hours. Postmortem examination discloses

the first 5 cm. of the duodenum acutely inflamed and hemorrhagic, the contents being bile-stained bloody mucus, serous effusion in the peritoneal cavity, and pure culture of the organism recoverable from the heart blood, gallbladder and upper part of the small intestine. The organism does not produce a soluble exotoxin, as shown by the intravenous injection of 5 cc. of a twelve hour growth, drawn through a Seitz filter, in a rabbit that did not eat for twenty-four hours but was alive at the end of a month. The author concludes that *Bacterium dispar* (Andrewes) would appear to belong to the larger group of organisms described as *Bacillus coli-anaerogenes*. The *dispar* group is serologically heterogenous, and, as a group, distinct from the bacillus variously known as *Sonne's bacillus*, or *Bacillus ceylonensis* A, or *Bacillus kruse-castellani*. It is probably a commensal which becomes a concomitant when the normal flora of the blood is disturbed by the entry of an intestinal pathogen. It cannot be accepted as a dysenterogenic organism until further serologic evidence is obtained from the study of many strains.

Lancet, London

1: 563-620 (March 18) 1933

Pneumococcal Infections. R. Cruickshank.—p. 563.

Epidemiology Applied to School Life. J. A. H. Brincker.—p. 569.

*Actinomycosis. R. Bates.—p. 571.

Grass Pollen Antigen for Hay Fever Desensitization. J. Freeman.—p. 573.

*Some Aspects of Pathology of Pyemic Conditions: Based on Study of Four Cases of Severe Acute Osteomyelitis Treated with Benzene. T. H. C. Benians.—p. 574.

*Magnesium Sulphate in Treatment of Angiospasm. N. Pines.—p. 577.

Actinomycosis.—Bates presents an analysis of twenty-nine consecutive cases of actinomycosis seen in the London Hospital over a period of five and a half years. In every case the presence of the streptothrix was verified by the bacteriologic examination of pus obtained at operation or at necropsy. In his series none of the patients were under the age of 10, twenty-one were under the age of 40, and seven of these were under the age of 20. Clinically, the infections may be divided into two main groups: the superficial group, which includes the cervicofacial variety and subcutaneous infections of the limbs; and the deep group, which includes the thoracic and abdominal cases. In the first group the infection does not endanger life, but in the second it only too frequently proves fatal. The author concludes that human actinomycosis appears to be invariably an infection with the non-acid-fast anaerobic streptothrix *Actinomyces bovis*. The superficial variety of actinomycosis occurs more commonly than is usually supposed. In cervicofacial cases, before the formation of pus, trismus is the most important sign. Early diagnosis by a bacteriologic examination of pus in all cases of alveolar abscess, and early treatment with iodides will prevent the terrible scarring and repeated relapses associated with the disease. If a test tube containing actinomycotic pus is tilted, the granules are visible to the naked eye as greenish gray specks adhering to the glass. When a routine bacteriologic examination of all pus is impossible, this method of tilting the test tube and examination through a hand lens would indicate the more suggestive cases which need fuller investigation. In the deep variety there is such a high mortality that a routine bacteriologic examination of the pus in cases of empyema, appendicular abscess and subdiaphragmatic abscess is imperative. When the disease is suggested by its chronicity, it has usually spread beyond human aid. In both types of the disease adequate drainage, with the resulting increase in oxygen tension of the part affected, and massive dosage with iodides appear to give the best results. Prognosis depends on the anatomic site of the lesion and early recognition of the disease.

Pyemic Conditions and Acute Osteomyelitis.—Benians treated with benzene four cases of acute osteomyelitis presenting septicopyemia, with the object of diminishing the leukocytic reaction. In three of them there was a marked fall in the white cell count, and in the fourth a profound leukopenia set in. The purulent discharge diminished and became more watery. The patients all recovered and no after-effects due to the benzene have been noted. The most recent of the cases quoted was two years ago. There was an artificial restriction of the output of leukocytes in the later stages of the disease, and the author claims that this was an advantage rather than

a disadvantage. In each of his patients an opening in the bone had been made and drainage established. After the operation, as soon as the blood count was found to be actively rising, the patients were given 10 minims (0.6 cc.) of benzene by mouth two or three times a day or, for the younger children, 5 minims (0.3 cc.) three times a day, according to the degree of the white cell count and the amount of red blood available, for this may in time also be affected. The drug is given in capsules or in milk. The progress of the white cell count was followed every few days, and when the count had fallen to about 10,000 the drug was discontinued. The fall may continue after the drug has been stopped; consequently, when the administration has been continued for some time, it should be stopped while the count, though falling, is still relatively high; i. e., from 12,000 to 15,000.

Magnesium Sulphate in Angiospasm.—Pines has obtained good results in many cases of angiospasm treated with magnesium sulphate. His method is as follows: With the patient lying on a couch with the head and shoulders slightly raised, a solution of magnesium sulphate and dextrose is slowly injected into the vein. The dose is from 5 to 10 cc. of a 20 per cent solution and an equal volume of from 10 to 40 per cent dextrose. About half a minute after the commencement of the injection the patient feels an intense heat in the body. This is first experienced at the back of the pharynx, then in the face and neck, then in the thorax, and sometimes in the upper limbs, and it proceeds down to the rectum and genitalia, the lower limbs being the last to react. The face is sometimes intensely flushed and may even perspire; the skin of the limbs and body hardly alter in color or temperature. The pulse becomes moderately quickened. The blood pressure is unaltered. On ophthalmoscopic examination, the retinal vessels show no change. In the author's opinion the magnesium sulphate probably relaxes vascular spasm by direct action on the vasomotor center of the brain. If it acted directly on the arterial wall there would not be the constant sensation of heat. The more spastic or the more clogged the vessel, the less is the sensation of heat and the less effective is the injection. The patient can tell exactly where the sensation of heat ceases, and the author has found that the oscillometric index invariably corresponds to the patient's sensations. If the intravenous mode of injection is for some reason impracticable, the solution of magnesium sulphate without dextrose is well tolerated intramuscularly, but the intravenous route is the one recommended. He did not observe any discomfort in any of his patients, although several of them were more than 60 years of age, and he thinks that the alarming signs of respiratory distress that have been seen in the cases of tetanus treated with magnesium sulphate may be explained as due either to the intrathecal method of injection or to excessive dosage. He usually administers the treatment to his patients twice a week.

South African Medical Journal, Cape Town

7: 169-204 (March 25) 1933

Autosuggestion and Hypnosis in General Practice. H. V. Exner.—p. 171.

Pituitary Tumor. J. C. G. MacNab.—p. 176.

Pharmacologic Actions of *Urginea altissima* (L. Fil.), Baker, D. Epstein.—p. 180.

Medical Association in Northern Transvaal. L. S. Robertson.—p. 183.

Tubercle, London

14: 241-288 (March) 1933

*Complications of Artificial Pneumothorax: Their Prevention and Treatment. A. G. J. Harris.—p. 241.

Pulmonary Tuberculosis Complicating Glandular Tuberculosis: Notes on Fifty-Eight Cases. W. M. Cumming.—p. 259.

Some Clinical Types of Tuberculosis. L. S. T. Burrell.—p. 263.

Complications of Artificial Pneumothorax.—Harris classifies and discusses the various complications of artificial pneumothorax under the following headings: (1) accidents occurring during the process of induction or during a refill, (2) complications occurring usually after the induction, (3) cardiac complications, (4) complications in the opposite lung, (5) tuberculous disease in other organs and (6) complications from general diseases. He concludes that the complications of artificial pneumothorax are numerous; some are rare and should not occur if sufficient care is taken; others, such as serous effusions, are common and their occurrence is difficult to prevent. The type of gas used is immaterial; carbon dioxide

is most rapidly absorbed, but air filtered through wool is generally the choice. Full anesthetization of the subcutaneous tissues and pleura should be carried out on every patient and before every refill. High intrapleural pressures are best avoided. The correct spacing of refills is important, as is control by roentgen examinations. Effusions occur in at least 50 per cent of cases, and amounts demonstrable only by roentgen rays occur in 100 per cent of cases. Various methods of dealing with the large and purulent effusions are in vogue, but a really satisfactory treatment has yet to be devised. Hemoptysis is sometimes increased by artificial pneumothorax. Tuberculous disease occurring elsewhere in the body and the presence of any other serious disease, such as diabetes, seriously complicate the case. Artificial pneumothorax, safely used, is of definite therapeutic value in properly selected cases. In cases not suitable for this form of treatment, complications are more liable to occur.

Gynécologie et Obstétrique, Paris

27: 385-480 (May 5) 1933

Fibromuscular Formations of Human Placenta and Their Role in Placental Circulation. G. Dubreuil and M. Rivière.—p. 385.

*Value of Chemical Sympathectomy in Gynecology. A. Binet.—p. 393.

*Evaluation of Retrograde Ovarian Function and Quantity of Amniotic Fluid in Pregnant Women. G. Albano.—p. 416.

Extended Indications and Results of Uterine Revision Immediately After Delivery. R. Keller and E. Bohler.—p. 425.

Dressing and Section of Umbilical Cord. P. Gousikoff.—p. 445.

Chemical Sympathectomy in Gynecology.—Binet states that chemical sympathectomy in its gynecologic applications is an easier and more rapid operation than surgical sympathectomy. By this method the sympathetic can be easily reached at the level of the superior hypogastric plexus innervating the uterus and the ovarian plexus innervating the ovaries, thereby permitting a complete action on the genital tract, which is desired in most cases. The author uses a 6 per cent solution of tricrosol as the chemical agent. It is innocuous for the tissues, is nontoxic and has a selective action on the sympathetic fibers. He employs two methods: one consists of applying tampons with tricrosol solution to the nerve plexus after incision of the peritoneum, and the other consists in subperitoneal injection of the tricrosol solution. After laparotomy, an injection of not more than 20 cc. of the tricrosol solution is made under the posterior parietal peritoneum in the region of the promontory. Care must be taken not to pierce a vein. Similar injections of not more than 15 cc. are made in the region of the mesovarium and, if necessary, the broad ligaments. Chemical sympathectomy, like the surgical method, is indicated in disturbances of the vagosympathetic equilibrium. The principal indication for it in gynecology is pain. If pain is linked with an organic lesion, chemical sympathectomy may be used to supplement the causal therapy which does not always stop the pain, as in ventrosuspension, and in painful syndromes without distinct macroscopic substratum it often attains remarkable results. The immediate results obtained by the author were always favorable, but it is too early to discuss the late results as his experiences cover less than two years.

Quantity of Amniotic Fluid.—By retrograde ovarian functions Albano means the power of the ovum to expel from its cavity waste matters and substances useless to the function of the amniotic fluid. An easy and clinically exact method for the study of this function consists in the intra-ovular injection of 0.006 Gm. of phenolsulphonphthalein sodium and the control of its appearance in the urine, the duration of its elimination, the quantity eliminated and the time of its disappearance from the amniotic cavity. The injection is made by transabdominal puncture with a needle 10 or 12 cm. long. The needle, provided with a stylet to prevent the entrance of blood into the lumen, is inserted in the hypogastrium immediately above the fetal chin. To prevent piercing the bladder it should be voided before the injection. An assistant holds the fundus of the uterus to fix it against the abdominal wall. The phenolsulphonphthalein is diluted with the amniotic fluid, to assure its rapid diffusion through the cavity. The patient alternates from left to right lateral decubitus every five minutes for twenty minutes and then walks for ten minutes, after which an indwelling catheter is introduced for detection of the appearance of dye in the urine. The amount of amniotic fluid present can be calculated after dilution of the phenolsulphonphthalein and

before its resorption. The first appearance of dye in the urine of the pregnant woman occurs normally between forty-five and seventy-five minutes after the injection. The amount of phenolsulphonphthalein eliminated in the first twenty-four hours (determined colorimetrically) is about 30 per cent. Elimination of the dye in traces continues for from seventy to eighty hours. After twenty-four hours the residue of dye in the amniotic cavity is about 30 per cent, and after forty-eight hours only traces of it are found. In diseases having a repercussion on the ovum there is a deviation from the normal excretory cycle. In noncompensated cardiopathies the appearance of the dye is retarded and its elimination is prolonged; this is also true in women with toxemia. In pulmonary tuberculosis the cycle of elimination is shortened. In case of death of the fetus the elimination is prolonged for days. The ovarian function can be easily studied in the maternofetal sense by determining what percentage of 2 Gm. of potassium iodide injected intravenously into the pregnant woman has passed into the amniotic fluid one hour later. The mechanism of resorption (not excluding the deglutition of the fetus) must reside essentially in the passage through the wall of the ovum and especially through the extraplacental chorial and amniotic surface.

Paris Médical

1: 465-476 (May 27) 1933

Syphilitic Aortitis. R. Poinso.—p. 465.

*Electrical Treatment of Cavernous Angiomas: Electrolysis or Diathermy. H. Bordier.—p. 469.

Treatment of Hypertrophy of Tonsils by Diathermy Without Coagulation. T. Atkinson.—p. 473.

Treatment of Hypertrophy of Nasal Conchas by Noncoagulating Diathermy. H.-L. Sinskey.—p. 474.

Electrical Treatment of Cavernous Angiomas.—Bordier prefers diathermy to electrolysis for the treatment of cavernous angiomas which are covered by normal skin, because coagulation is obtained more quickly and fewer treatments are required; it is also less painful. He employs chiefly the bipolar method. In this method both needles are introduced into the tumor and the current is localized in the tumor itself. The coagulation occurs not only around the needle but in the interpolar space. He uses a bipolar diathermic fork in which the distance between the prongs can be varied according to the size of the tumor and which possesses two sets of insulated needles, one large and one small, to be fitted into the insulated handle. The needles are insulated all the way down to the point, as it is of the utmost importance not to coagulate the healthy skin covering the angioma. The fork is so introduced that the largest part of the tumor is situated between the two needles. The strength of the current varies in each case: the greater the distance between the needles, the more current is required. Coagulation is obtained in several seconds. When the volume of the clot is sufficient, the current is stopped and the fork withdrawn. This intervention does not require anesthesia. One coagulation sometimes suffices, but usually two are necessary to reduce the tumor completely. If a small elevation remains after coagulation, it can be coagulated by the monopolar method. With this technic the mark made by the needles is almost invisible.

Presse Médicale, Paris

41: 833-856 (May 24) 1933

Intolerance and Gestation. Lévy-Solal and J. de Pariente.—p. 833.

*Ventriculography: Technic, Results, Indications. T. de Martel, J. Guillaume and J. Panet-Raymond.—p. 834.

Value of Mechanical Study of Lung in Phthisiology. F. Dumarest and P. Lefèvre.—p. 839.

Ventriculography.—Martel and his associates have performed 300 ventriculographies in the last three years with only four deaths. Two of these occurred prior to the perfecting of their present technic and two occurred in patients so ill that death could not be attributed, with certainty, to the ventriculography. Frequently the ventriculography permitted precise localization of the tumor and even the determination of its size. In less satisfactory cases it permitted differentiation between a cerebral tumor and a cerebellar tumor and, when a cerebral tumor was concerned, the hemisphere in which it was located could be determined. In several cases it ruled out the diagnosis of brain tumor and spared the patient a useless trepanation. Ventriculography is indicated in all cases of

suspected brain tumor in which the clinical examination is not sufficient to affirm the existence of a cerebral tumor or permit an accurate localization of the tumor.

41:905-920 (June 7) 1933

Emotion as Factor in Disturbance of Humoral Equilibrium. E. Joltrain.—p. 905.

Latent Cancer of Pharynx. P.-C. Huet.—p. 908.

*Trigemino-cardiopulmonary Reflex. P. Caryophyllis.—p. 909.

Red Spots on Cheeks of Tuberculous Patients.—Caryophyllis says that the red spots which appear on the cheeks of some patients with pulmonary tuberculosis on the side corresponding to the lesion are observed only in patients with extensive lesions and are due to a trigeminocardiopulmonary reflex. The pulmonary lesion by irritation of the centripetal neurosympathetic fibers of the lungs determines a reflex irritation of the centrifugal fibers which, if strong enough, manifests itself in a vasodilatation of the cheek homolateral to the diseased lung or, if not strong enough, causes a latent disturbance of the sympathetic tonus. In such cases, the author found that the application of hot water bottles to the cheeks by provoking an irritation of the sympathetic ganglion cells of the external tunic of the vessels causes a greater vasodilatation on the side of the latent neurosympathetic disturbance. The reflex is useful for determining on which side a unilateral pulmonary lesion or the more extensive of a bilateral lesion is located. Besides the local response there is a general response manifesting itself in an acceleration of the pulse and an increase of the arterial tension when the reaction is sympathicotonic. Investigation of a large number of patients with a neurosympathetic dystonia showed that the reaction was always parasympathicotonic in patients clinically parasympathicotonic and that the opposite reaction occurred in patients clinically sympathicotonic. A study of the trigeminocardiopulmonary reflex is therefore valuable for the study of the sympathetic nervous tonus. Certain rules must be observed in studying the reflex. The patient must be in dorsal decubitus fifteen minutes before the examination. The room must not be overheated. The water containers must be of equal size and weight and filled with equal quantities of water of the same temperature. They must be applied and removed at the same time. They should occupy the same place on the cheek, preferably the entire cheek. The patient should be warned in advance not to rub his cheek. The reflex should be studied only by daylight. If the patient is a man, his cheek should be well shaved.

Schweizerische medizinische Wochenschrift, Basel

63: 529-560 (June 3) 1933

*Significance of Calcium Metabolism for Rickets and Caries. E. Rothlin.—p. 529.

Development Mechanism as Therapeutic Principle in Orthopedics. H. Iselin.—p. 536.

Cholecystogastrostomy. A. Jentzer.—p. 542

*Arsphenamine Pannmyelophthisis. O. Merkelbach.—p. 546.

Oral Digitalis Therapy. C. Rohrer.—p. 548.

Pneumonic Lesion as Basis of Pulmonary Tuberculosis. I. Fischer.—p. 550.

Calcium Metabolism in Rickets and Caries.—On the basis of experimental and clinical studies on calcium metabolism and its significance for rickets and dental caries, Rothlin reaches the following conclusions: 1. The calcium metabolism and its regulation by the parathyroids and by vitamin D is the physiologic foundation for the normal development of bones and teeth. 2. The pathologic changes in bones and teeth, rickets and caries, are caused by the same disturbances in the calcium metabolism, particularly by a deficiency of calcium, phosphorus and vitamin D, by a dysfunction of the parathyroids and by giving children a diet rich in cereals. 3. To obtain a physiologically homogeneous calcification of the deciduous and of the permanent teeth, as well as their regular spacing in well developed bones, a suitable dietetic prophylaxis is necessary. This prophylaxis should begin at the time of beginning calcification of the bones and of the teeth, that is, in the mother, during the time of gestation and lactation, and it must be continued in the growing child. Inadequate diet of the woman during pregnancy and lactation creates a predisposition for rickets and caries, and a deficient diet in the growing child leads to their manifestation. 4. Rickets as well as caries can be therapeutically influenced by a suitable diet; rickets can be completely cured, active caries can be checked, and the resistance against external

chemical and bacterial influences that are contributing causes of caries can be increased.

Arsphenamine Pannmyelophthisis.—Merkelbach gives the clinical history of a woman who, in the course of antisyphilitic therapy, showed hypersusceptibility to arsphenamine. In spite of this, further antisyphilitic treatment was possible fifteen months later, but five months after the conclusion of this treatment the patient required treatment for anemia. The author points out that blood diseases developing as sequelae of arsphenamine therapy generally become manifest immediately or shortly after the injections, and he therefore considers the latent period of five months worthy of note. He gives a tabular report indicating the blood status at the time treatment was begun and its gradual improvement under the influence of blood transfusions and other therapeutic measures. With the exception of a slight eosinophilia and a rather severe thrombopenia the blood status is now almost normal, but at the beginning of treatment the hemoglobin content and the form elements were greatly reduced. Whether the present status is only a remission or a complete cure cannot be decided as yet. The author considers the reported case as a connecting link between the fatally ending and the mild forms of toxic injury of the bone marrow. The impairment may involve only a partial function or all functions of the bone marrow. The fact that, one year after the beginning of the symptoms of anemia and more than eighteen months after the last arsphenamine injection, there still existed a thrombopenia seems to prove that arsenic preparations may cause myelotoxicoses of varying severity but also that there is a gradual transition between thrombopenia, thrombopenic anemia, agranulocytosis and pannmyelophthisis. The sensitive megakaryocytes, however, are damaged first, most severely and longest.

Archivo de Medicina, Cirugia y Espec., Madrid

36: 589-616 (May 27) 1933

Indications, Technic and Results of Gastrectomy. T. Hernando, L. Serrada and A. Catalina.—p. 589.

*Action of Cardiac Hormones on Lactic Acid and Dextrose Content in Blood. J. A. Collazo, J. Puyal and Isabel Torres.—p. 599.

Action of Cardiac Hormones.—Collazo and his collaborators state that the action of organic extracts on the mechanism of circulation is due to their content in cardiac hormones. Cardiac hormones may be divided into true cardiac hormones and arterial hormones. True cardiac hormones have a cardiac, muscular or visceral origin. Their active principle is adenylic-phosphoric acid. Arterial hormones are of pancreatic origin. Their active principle is still unknown, although it is believed that it is also adenylic-phosphoric acid. In order to ascertain the significance of adenylic-phosphoric acid in muscular metabolism, the authors first determined the normal glycemia and the normal content of lactic acid of the blood of two groups of normal rabbits. Then the animals of one group received an injection of 1 cc. per kilogram of body weight of a cardio-kinetic muscular extract, while those of the other group received the same dose of a pancreatic extract. The glycemia and the content of lactic acid in the blood of the animals were then determined at various intervals. The authors conclude that only the hormone contained in the muscular extract may be identified with adenylic-phosphoric acid. This hormone acts on the neuromuscular system, bringing about a dilatation of the coronary and peripheral vessels. It had a constant action on the lactic acid content of the blood, which decreased from 31 mg. per hundred cubic centimeters of blood before the injection to 26, 24 and 27 mg. per hundred cubic centimeters of blood, 30, 60 and 120 minutes, respectively, after the injection. Glycemia increased from 94 mg. per hundred cubic centimeters of blood before the injection to 95, 101 and 97 mg. per hundred cubic centimeters of blood in the same periods. The action of the pancreatic hormone deprived of insulin on glycemia and on the lactic acid content of the blood is less marked than that of the hormones contained in the muscular extracts, either because its active principle is a specific hormone and not adenylic-phosphoric acid, or because its content of adenylic-phosphoric acid is not equal to that of the muscular extracts. In the majority of the cases, the lactic acid content of the blood showed oscillations from 28 mg. of lactic acid per hundred cubic centimeters of blood before the injection to 30, 27 and 29 mg. per hundred cubic centimeters of blood after 30,

60 and 120 minutes, respectively, after the injection. Glycemia followed the variations with a tendency to a diminution, that is from 85 mg. per hundred cubic centimeters of blood before the injection to 80, 76 and 92 mg. per hundred cubic centimeters of blood in the same periods. The results justify the hypothesis that the action of cardiac hormones is primarily on the metabolism of carbohydrates and phosphorus of the peripheral muscles and of the cardiac muscle and, mostly, in the muscular layers of the vessels, thus favoring the energetic output of the vessels.

Beiträge zur Klinik der Tuberkulose, Berlin

82: 509-654 (April 22) 1933

- Early Recognition of Pulmonary Tuberculosis. K. Zech.—p. 509.
Decrease in Tuberculosis Mortality and Relations to General Mortality. E. Fürth.—p. 533.
Knowledge of Lay Persons About Tuberculosis. A. L. Peitmann.—p. 549.
Pathologic Anatomy of Beginning Stages of Reinfection in Pulmonary Tuberculosis. W. H. Stefkó.—p. 566.
Total Resection of First Rib. H. Kleesattel.—p. 571.
*Critical Remarks on Spontaneous Pneumothorax as Complication of Simultaneous Bilateral Pneumothorax. A. Pollerbeck.—p. 579.
*Tests of Cardiac Function of Patients with Pulmonary Tuberculosis. E. Witzentrath.—p. 585.
Various Forms of Calcium in Serum in Tuberculosis of Joints and Bones. N. Okuneff and Sophie Wólowa.—p. 597.
*Demonstration of Tubercle Bacillæmia According to E. Löwenstein. J. Schramek.—p. 606.
Value of Diagnostic Tebeptin Reaction in Regard to Degree of Activity and to Prognosis of Pulmonary Tuberculosis. F. Bartelt.—p. 615.
Organic Disturbances and Prognosis in Bronchial Asthma. M. Hamann.—p. 619.
Incidence of Tuberculosis in China. P. D. Kou.—p. 641.

Complication of Simultaneous Bilateral Pneumothorax.

—Pollerbeck reports observations on a patient with bilateral pneumothorax in whom the roentgenogram revealed a displacement of the mediastinal organs to the left. A pneumothorax on the left side could not completely offset this displacement. Several hours after the pneumothorax had been induced also on the right side, there developed symptoms that seemed to indicate a spontaneous pneumothorax. However, the slowly progressing development of the condition, the negative pressure in the pneumothorax and the disappearance of the painful symptoms following the withdrawal of some of the air indicated that the disorder was not a spontaneous pneumothorax. The author agrees with Alexander who, in the *Deutsche medizinische Wochenschrift* (58:1351 [Aug. 26] 1932; abstr. THE JOURNAL, Nov. 5, 1932, p. 1642), called attention to the significance of the yielding mediastinum, and he thinks that the described disorder was the result of such a mediastinal displacement. The same symptoms developed several months later in the course of a simultaneous bilateral filling, while the refillings in the meantime had remained free from complications. A condition that can be considered a spontaneous pneumothorax developed several weeks later in the course of a unilateral filling.

Tests of Cardiac Function in Pulmonary Tuberculosis.

—Witzentrath calls attention to the fact that the extensive use of collapse therapy in patients with pulmonary tuberculosis has given greater importance to the tests for the estimation of the circulatory function, particularly the heart action, because the cardiac function is taxed severely, especially in the course of plastic operations. Since there is no single method that permits an adequate estimate of the function of the heart, the author employed several methods. In addition to the clinical and roentgenologic examination of the heart and of the respiratory conditions, he examined the blood pressure and the pulse, employed Kauffmann's water test, resorted to the photographic registration of the pulse of the jugular vein, which, according to Weber, gives better information about the cardiac function than any other graphic method and, in some of the patients, he also did electrocardiography. The photographic registration of the pulse of the jugular vein in 220 patients with open tuberculosis gave normal results in 2.3 per cent, slight changes in 58.2 per cent, medium changes in 23.6 per cent, and severe changes in 15.9 per cent. In 110 patients with open tuberculosis, the blood pressure and the pulse were taken and photographic registration of the venous pulse and Kauffmann's water test were made, and in twenty-seven cases electrocardiography was done in addition to these tests. The blood pressure was normal in 31.8 per cent of the patients, slightly changed in 48.2 per cent and greatly changed in 20 per cent. The

pulse was normal in 13.6 per cent, slightly changed in 65.5 per cent and considerably changed in 20.9 per cent. Photography of the venous pulse gave practically the same results as indicated for the 220 cases. Kauffmann's water test was negative in 85.4 per cent and positive in 14.6 per cent. Electrocardiography revealed abnormal conditions in only one patient. That the simultaneous use of several test methods gives reliable information about the cardiac function became evident in operative interventions on seventy-four patients.

Demonstration of Tubercle Bacillæmia.—Schramek reports his observations with Löwenstein's method for the culture of tubercle bacilli from the blood. He found that Löwenstein's culture medium is one of the best. Tests with human, bovine and avian types of tubercle bacilli revealed that the latter type grew best and that the bovine type showed the least favorable growth in this medium. Tubercle bacilli introduced into the blood in vitro are always demonstrable in the culture, but their detection is difficult in the blood sediment. Blood constituents impair growth in the culture: the greater the withdrawal of hemoglobin, the better the growth. Hemolysis with distilled water is to be preferred to hemolysis with acetic acid. Artefacts of various types are often present in the smears from the blood sediments and from the blood cultures and, since they readily cause errors, must be differentiated. Only two of 522 blood cultures from 332 patients with pulmonary tuberculosis gave positive results. The microscopic demonstration of tubercle bacilli from the blood sediment smears of these blood tests was never possible. For the certain identification of tubercle bacilli from cultures of the blood, it is not only necessary to produce the characteristic stain in the smear but to prove transferability by inoculation. In patients with extrapulmonary complications, the results of the blood culture were always negative. The author's tests show that the demonstration of tubercle bacilli in the blood is an extremely rare occurrence.

Dermatologische Wochenschrift, Leipzig

96: 705-732 (May 27) 1933

- Role of Weakening Inflammation Substances in Light Biology and Their Therapeutic Utilization. E. Rajka.—p. 705.
Tic as Result of Muscular Gummy. N. Szcenderowicz.—p. 708.
*Functional Changes of Thyroid in Florid Secondary Syphilis Determined by Kottmann Reaction. A. D. Troitzkaja.—p. 709.
*Local Immunization Manifestations in Gonorrhea Cutireaction. C. Engel and H. Grundmann.—p. 716.

Functional Changes of Thyroid in Secondary Syphilis.

—Troitzkaja points out that, whereas in gummatous and congenital syphilis the endocrine glands may present gummatous or fibrous processes, secondary syphilis causes only temporary changes that do not lead to anatomic changes but are more of a functional character. Clinical observations often reveal an irritative swelling of the organ, but the functional changes are not so easily recognized. To determine the functional changes the author employed the Kottmann reaction, a photochemical colloid reaction, which indicates the functional activity of the thyroid on the dispersion capacity of the serum. Since women are more subject than are men to disturbances of the thyroid, tests were made on 100 female syphilitic patients, of whom 15 were in the primary stage of syphilis, 50 in the beginning secondary stage, and 35 had relapses. None of the patients had received treatment before the test. The results indicate that the spreading syphilitic infection involves the thyroid and that the impairment usually becomes manifest in a reduction of its functional activity, although its function may be increased in a small percentage of cases. The Kottmann reaction, in revealing the smallest functional changes, also proved that the swelling of the gland generally concurred with hypofunction and not with hyperfunction, as is the case in exophthalmic goiter. This concurrence of the swelling of the thyroid with hypofunction is the result of a temporary inflammation. The syphilitic character of the thyroid changes is proved by the efficacy of the antisyphilitic treatment.

Local Immunization in Gonorrhea Cutireaction.

—Formerly reported investigations had proved to Engel and Grundmann that by means of an intracutaneous test with a gonococcus vaccine an existing or a former gonorrhea could be detected in a large percentage of patients. But whereas before they had observed only local reactions following intra-

cutaneous as well as subcutaneous (for therapeutic purposes) injections, they now found that under certain conditions the repeated administration of the gonococcus vaccine may cause a generalized toxic urticaria in which only the area of the first vaccination is spared. The authors think that this manifestation was produced because of the unusual time of reinjection, for in former cases the injections had always been continued immediately after the intracutaneous test, whereas in the reported case two weeks had intervened between the test and the vaccine treatment. They believe that, if the injections are continued, the local reactions become steadily weaker, even after increased doses of antigen, because of a gradually progressing desensitization. The immunity of the site of the primary injection is particularly noteworthy. Experiments in which the reactions following reinjection into the site of the first vaccination were compared with reactions in other areas indicated that the preliminary vaccination had produced such an increase in antibodies that the repeated administration of the antigen led to a partial saturation. Thus the process seems to be the expression of a positive anergic phase. A second series of tests corroborated this assumption. A refractory behavior of the papillary body at the site of the first vaccination can be excluded, since in the experiments the differences generally became manifest only after forty-eight hours, whereas after twenty-four hours the cutaneous reactions were practically equivalent at the previously treated and the untreated sites. The complete immunity of the site of vaccination to the generalized exanthem can be explained by the small amount of the resorbed antigen. These local immunity reactions explain the therapeutic results of local vaccinations, such as the vaccination of the portio vaginalis, the vulvovaginal gland and the rectal mucous membrane.

Deutsches Archiv für klinische Medizin, Berlin

175:129-264 (May 12) 1933. Partial Index

- *Clinical Significance of Q Wave in Electrocardiogram. J. Freundlich.—p. 129.
- Chronic Essential Thrombopenia and Endocrine System. L. Funstein.—p. 146.
- Lead Poisoning and Demonstration of Lead. H. Bohnenkamp and W. Linneweh.—p. 157.
- Patients with Heart Disease During Work. H. Dennig and S. H. Procter.—p. 170.
- Addisonism in Chronic Gastro-Enteritis. F. Diehl.—p. 177.
- Hypoglycemic Shock and Its Action on Central Nervous System; Also Contribution to Its Pathogenesis. G. Bodechtel.—p. 188.
- *Treatment of Gastric Ulcer by Means of Jejunal Catheter. H.-G. Scholtz and J. Brugsch.—p. 202.
- *Central Nervous Regulation of Red Blood Picture. F. Salus.—p. 214.
- Treatment of Anemias with Own Blood That Has Been Treated by Ultraviolet Rays. C. Fervers.—p. 226.
- Cause of Crescendo Murmur of Mitral Stenosis. K. Gotsch.—p. 241.
- Nocturnal Limitation of Diuresis. A. Jores.—p. 244.
- Critical Investigations on Ectoscopy. E. Weisz.—p. 254.

Clinical Significance of Q Wave.—In studying the significance of the deep Q wave, Freundlich found that the enlargement of the Q wave always concurs with a change in the intermediate portion (RS up to T) or in the T wave in at least one of the three leads. The isolated appearance of the enlarged Q wave in the third lead is not necessarily pathologic, since it is observed occasionally in patients who have a high diaphragm but who are free from other cardiac changes. However, if an enlarged Q₃ concurs with an enlarged Q₂ or with an enlargement of the T wave or of the intermediate portion in leads 1 and 2, it is a symptom of myocardial infarct or of severe myocardial damage and usually indicates a coronary sclerosis (or stenosis of the coronary ostium resulting from syphilis). The appearance of a deep Q in the first lead has the same significance, even if there is no change in the ventricular complex in the first and second leads. In disturbances that are not the result of a coronary sclerosis (in rheumatic endocarditis and myocarditis and in thyrotoxicosis) an enlargement of the Q wave is extremely rare. The most frequent change in the ventricular complex during myocardial damage is an enlargement of the Q wave in the second and third leads (Q₂ larger than Q₃) combined with negativity of the T wave or with depression of the intermediate portion in the same leads.

Treatment of Gastric Ulcer by Means of Jejunal Catheter.—To determine the therapeutic value of jejunal catheter feeding in patients with gastric ulcer, Scholtz and

Brugsch determined the acidity of the secretion of the fasting stomach and compared it with the acidity during periods when the patients received a porridge diet. They also tested the acidity of the urine. The results of the investigations indicate that feeding by means of the jejunal catheter produces a greater secretory rest for the stomach than does the customary porridge diet. Scholtz also tested the effect of jejunal feeding on the gastric motility and found that this method rests the stomach greatly.

Central Regulation of Red Blood Picture.—Salus describes the clinical histories of five patients with polyglobulism. In three the condition concurred with narcolepsy, in one with postencephalitic obesity and slight parkinsonism, and in the fifth with sarcoma of the frontal brain and mesencephalohypophyseal symptoms. He thinks that the concurrence of narcolepsy and polyglobulism, or of narcolepsy, polyglobulism and mesencephalohypophyseal disturbances indicates that in the gray matter of the mesencephalon there is a center which regulates the formation and the disintegration of the erythrocytes. He cites other investigators whose observations indicate such a regulatory center.

Wiener klinische Wochenschrift, Vienna

46:641-672 (May 26) 1933

- From the Workshop of the Anatomist. E. Pernkopf.—p. 641.
- Biologic Action of Ultrashort Waves. S. Jellinek.—p. 646.
- *Diagnostic Remarks on Sciaticas. I. Silbermann.—p. 650.
- Allergic Diseases of Mucous Membranes. K. Hajós.—p. 652.
- *Pyuria of Children. J. Siegl.—p. 655.
- Instrument for Introduction of Medicated Pencils into Urethra and Cervix Uteri. E. Lindenfeld.—p. 659.
- Intravenous Continuous Drop Infusion. J. Schnitzler.—p. 659.

Sciatica.—Silbermann calls attention to a form of sciatica refractory to the usual modes of treatment. Its most important symptom is that the percussion of the lumbar or of the thoracic portions of the vertebral column results in the radiation of pain to the region of the sciatic nerve. Bending of the vertebral column laterally and slightly forward or backward, and movements of the head, particularly to the side opposite to the affected leg, likewise produce the radiating pains. Roentgenoscopy of the vertebral column reveals mostly normal conditions. The cell count and the protein values of the spinal fluid are generally normal. The anamnesis reveals that a cold or an influenza has preceded the sciatica. The discovery of arachnoiditic adhesions convinced the author that this form of chronic sciatica is caused by an inflammation of the soft spinal meninges; that is, by a chronic arachnoiditis. The nerve roots that otherwise move freely in the foramen spinale have become fixed by inflamed and edematous tissues and, by painful defense mechanisms, resist the stretching that results from movements. For the treatment of this form the author recommends injection of a vaccine, roentgen irradiation of the involved parts of the vertebral column and prolonged rest in bed.

Pyuria of Children.—Siegl states that in recent years the term pyuria, which simply designates the main symptom and dispenses with exact differentiation and topical diagnosis, has been widely accepted. In nurslings and small children, the acute form of pyuria predominates. The clinical aspects are usually those of a severe infectious disease. Some of the symptoms may easily lead to an erroneous diagnosis; for instance, the accelerated respiration may lead to the diagnosis of pneumonia or, if diarrhea exists, typhoid may be thought of, and, in older children who can describe their pains, the condition may be mistaken for appendicitis. To avoid such erroneous diagnoses, the examination of the urine is of the greatest importance. However, besides the misleading symptoms, children with acute pyuria also show a behavior and an appearance that is characteristic for this disturbance. They are restless, have a frightened look and present an ashy pallor which may appear somewhat icteric. Besides these acute forms, pyuria may also occur as an accompanying symptom in dystrophic and atrophic nurslings. In discussing the pathogenesis of pyuria, the author evaluates vitamin deficiency, malformations of the urinary tract, calculi and urogenital tuberculosis. In the secondary pyurias the prognosis depends on the primary disorder, and in the acute forms on the general condition and on the development of complications. Death from urosepsis is comparatively rare. The treatment should consider the various

causal factors. In the acute forms the improvement of the general condition, an adequate fluid supply and a correct diet are essential.

Zeitschrift für Krebsforschung, Berlin

39: 93-218 (May 23) 1933. Partial Index

- *Tumor Growth and Vitamins. E. Fränkel and P. Geréb.—p. 93.
- Seasonal Fluctuations of Mortality from Cancer and Tuberculosis. P. Geréb.—p. 104.
- Aspects of Mixed Tumors of Mamma of Dogs. K. Nieberle.—p. 113.
- Nerves in Tumors, Away from Tared Area. M. N. Meissel.—p. 128.
- Susceptibility of Skin of Mice to Sarcoma Virus. A. Besredka and L. Gross.—p. 138.
- Port of Entry for Sarcoma Virus in Mice. A. Besredka and L. Gross.—p. 143.
- *Influence of Vitamin E on Inoculation Tumors. P. Engel.—p. 148.
- Carcinoma of Maxillary Sinus and Metaplasia. W. Schütz.—p. 152.
- Statistical Studies on Cancer in Düsseldorf. L. Thomas.—p. 168.
- Unusual Case of Sarcoma of Mucous Membrane of Uterine Cavity. H. Offergeld.—p. 191.
- *Primary Carcinoma in a Meckel's Diverticulum. K. Franke.—p. 206.

Tumor Growth and Vitamins.—By feeding animals with excessive amounts of vitamins A, B, C and D, Fränkel and Geréb succeeded in transplanting the Jensen rat sarcoma to twelve out of thirty-two mice; this was possible only in two of thirty mice receiving an ordinary diet, and the heterologic transplantation was never successful in thirty-nine mice receiving food deficient in vitamin and mineral contents. The tumors reached considerable size under the influence of the excessive amounts of vitamins and, as a result, some of the animals died. Preliminary feeding with a diet of high vitamin content made it possible in one out of ten animals to transplant the rat tumor in the second generation from mouse to mouse, and in a second experiment this was possible in two out of eleven animals. This was never possible in mice that had received a normal or a vitamin deficient diet. The heterologic mouse tumor that developed in animals receiving a normal diet could not be transplanted further, not even to hypervitaminotic animals. Vaccination of the tumor from the mouse back again to the rat was always possible, irrespective of the diet. The inhibiting influence exerted on the growth of vaccination tumors by gestation or lactation could be nullified by feeding with large amounts of vitamins. A diet with high vitamin content also promoted relapse after incomplete removal of the Jensen rat sarcoma. For this reason the authors consider it advisable that patients who have been operated on for malignant tumors should receive a diet that, although providing a sufficient amount of calories, has a low vitamin content.

Influence of Vitamin E on Inoculation Tumors.—Engel found that the growth of vaccination tumors is not noticeably influenced by parenterally administered wheat germ oil with its high vitamin E content. The life span of the carcinomatous animals was reduced by this substance, and the growth of their neoplasms was not promoted. The sarcomatous animals were considerably less impaired. This is the more surprising since, according to the observations of Evans, a more pronounced modification is to be expected in tumors of mesodermal origin.

Primary Carcinoma in Meckel's Diverticulum.—Franke relates the history of a man, aged 54, who was operated on because of ileus symptoms. A Meckel's diverticulum the size of a fist was found. Its surface was ulcerated and it exuded jelly-like, mucous matter. The histologic examination revealed an adenocarcinoma with marked formation of mucus but without metastases. The patient recovered. The author points out that primary carcinoma of Meckel's diverticulum is extremely rare. He found only one other case, reported by Wissely in the American literature. He assumes that the primary carcinomas of Meckel's diverticulum develop from scattered embryonal traces; that for a long time they take an entirely benign course, and that, when they are removed early enough, they show a better tendency to heal than do other carcinomas.

Zentralblatt für Gynäkologie, Leipzig

57: 1201-1264 (May 27) 1933

- Influence of Extract of Posterior Lobe of Hypophysis and of Thyroxine on Lactation. F. G. Dietel.—p. 1202.
- Antibody Demonstration in Cervical Secretion. J. Schwarz.—p. 1205.
- Results of Clinical Obstetrics. H. Nevinny.—p. 1210.
- *Closed Ovarian Actinomycosis. E. Rumpf.—p. 1216.
- Is Atmocausis Still Practical? L. Paullig.—p. 1218.
- Vulvovaginal Anus and Virginal Prolapse. K. E. Fecht.—p. 1221.
- *Apiol Poisoning. J. Seiffert.—p. 1223.
- *Modification of Cleidotomy. N. A. Pautschenko.—p. 1227.

Closed Ovarian Actinomycosis.—Rumpf presents the clinical history of a woman, aged 40, who, about a year after an appendectomy, underwent a laparotomy on account of ovarian cysts and a uterine myoma. Histologic examination revealed a closed ovarian actinomycosis. The woman died five days after the operation. The case differs from most of the previously reported ones in that there was no absolute growth tendency and the content of the tumors was not suppurative. The author assumes an intestinal mode of infection.

Apiol Poisoning.—Seiffert discusses the form of polyneuritis that in recent years has been observed frequently following the use of the abortifacient apiol. He points out that the intoxication is not caused by the pure apiol but rather by an admixture, the triorthocresyl phosphate. Since little has been said about the outcome of the apiol intoxications, the author reports a case which was under his observation more than a year. Following ingestion of apiol, the patient had attacks of vertigo, nausea and vomiting, and a feeling of weakness in the extremities, particularly the legs. The neurologic examination revealed a reduced electrical reactivity of the muscles of the hand, particularly in the region of the median nerve. These muscles appeared atrophied, and all the nerves of the arm were painful to pressure. The tendon reflexes of the knee were hardly elicitable and the achilles tendon reflexes were abolished. The movements of the hip and of the knee were impaired and the motor power was considerably reduced. The peroneal and tibial nerves and the muscles of the leg were extremely sensitive to pressure. The patient could not stand or walk without the aid of other persons. The increase in pain, the unbearable headaches and the continuous vomiting induced the author to interrupt the pregnancy, but instead of improvement of the symptoms a considerable exacerbation was noticeable. Electrical treatments, massage and muscular exercises had no effect. The patient was not able to walk again without assistance until ten months after the poisoning. After twelve months, most of the symptoms had disappeared.

Modification of Cleidotomy.—Pantschenko directs attention to Chatunzew's modification of cleidotomy in which the incision is made deeper and the entire shoulder girdle is divided. If the resistance is especially great, the division should be followed by extraction of the arm, after which maneuver the delivery is readily accomplished. Compared to ordinary cleidotomy, this modification has the advantage that its technic is not more difficult but reduces the width of the shoulder girdle considerably more. The author states that the method can be employed in head presentations as well as in breech presentations, when the fetus is dead and the extraction of the arms is difficult. It is indicated in cases of narrow pelvis, large fetuses, obstructions on the soft parts of the parturient canal, and when rapid delivery is necessary in cases of insufficiently dilated os uteri.

Ugeskrift for Læger, Copenhagen

95: 573-602 (May 18) 1933

- *Value of Circular Resection in Chronic Gastric or Duodenal Ulcer. K. Roholm.—p. 573.
- Grave Urticaria Treated with Insulin. O. Wedel-Brandt.—p. 590.
- Shoulder-Blade Shadow in Pulmonary Roentgenogram. O. Bouet.—p. 590.

Circular Resection in Chronic Gastric or Duodenal Ulcer.—Roholm reports 130 cases in which operation was performed between 1909 and 1931, of which 40 were transverse resections of the corpus of the stomach and 90 were pylororesections. After-examination was made in 105 cases, from one and one-fourth to twenty-two years later. Transverse resection of the corpus was abandoned because of the frequent development of new ulcers corresponding to the scar formation of the operation. Preliminary pylororesection in eighty-two cases resulted in recovery in 69.2 per cent, recovery or improvement in 81.5 per cent and poor results in 18.5 per cent. The mortality was 12.2 per cent. Polya's method seems to give better results than the first method of Billroth. Comparison between pylororesection and gastro-enterostomy, on the basis of Nielsen's after-examination in 101 cases of gastro-enterostomy done in the same hospital division from 1906 to 1916, fails to show any definite difference in the value of the two operative procedures when they are used as the normal method.

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THE RURAL TUBERCULOSIS PROBLEM IN THE SOUTH

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Just fifty years ago, Koch discovered the tubercle bacillus. This "find" proved epoch making and comparable to the discovery of gun powder, the printing press, the steam engine, the cotton gin and the pneumatic tire, in that each of these has perceptibly modified man's previous mode of living. Within the brief span of a half century and because of this discovery, the world's outlook on tuberculosis has completely changed.

Tuberculosis as "captain of the hosts of death" has been dethroned. Be the cause what may—and the contributing factors have been legion—this disease has been deposed from its high pinnacle by "heart disease" and now sulkily sits as the seventh chief offender in this regard. From 1898 to 1908 the death rate from tuberculosis dropped one fourth; in the next decade, that is, from 1908 to 1918, it dropped one third; from 1918 to 1928 it dropped one half. Since 1918 the rate in the United States has dropped from 150 to 70.7 per hundred thousand and that of the Southern conference area from 140 to 80.4.

The reason for the higher mortality rate in the Southern conference area is, of course, the fact that 80 per cent of the Negroes in the United States are to be found in this area. It is a well known fact—the possible causes of which need not here be argued—that the Negro death rate is from two and one-half to three times that among the white population. Unquestionably, the general living conditions and the economic status of the Negro population is poor and has contributed in no small measure to the propagation of tuberculosis. Dublin states that in the fifteen-year period prior to 1926 the reduction in the tuberculosis mortality rate for Negroes was 44 per cent. This should offer encouragement as to the possibilities of improving the tuberculosis situation among Negroes, when the comparatively small amount of work that has been immediately directed to this population group is realized.

It is estimated that there are 250,000 people in the Southern conference area afflicted with tuberculosis. An analysis by McCain of figures available for cases in adults admitted to sanatoriums in the Southern area

during 1930 and 1931 indicates that, of the 9,785 studied, 11.4 per cent were minimal, 42.2 per cent were moderately advanced and 46.4 per cent far advanced. Do not these figures speak volumes? From these facts must be deduced two simple conclusions, to wit: The problem is big and the necessity for early diagnosis is paramount. The keynote of subsequent further progress in the control of tuberculosis must be "early diagnosis," and this keynote has been clearly struck in our fifty years of experience. We stand today not only at the half century mark but also at a point half way up the steep incline where we may well look back over the years of battle and, profiting by the errors and failures of our predecessors, vigorously press forward to a complete solution of this problem.

The status of tuberculosis as a communicable disease is so well founded as to call for no argument on this point. Particular attention, and properly so, has been given in recent years to the relation of the family unit in the propagation of the disease. All factors that are presented in poverty, such as overcrowding, undernourishment and poor environment, of necessity play an important part in the widespread exposure and tubercularization of the population. It requires the spark, a positive sputum, to set off the conflagration, and the intimate contact of the members of a family unit is most favorable for immediate and intensive spread. While extrafamilial contact may be an important factor, the problem is reduced to the family unit with the appearance of manifest tuberculosis in one of its members.

The widespread exposure over considerable periods and consequent tubercularization of the population has been repeatedly demonstrated. Aronson, in a recent survey of the Southern states, found an average of 55 per cent reactors among Negro and white children in rural areas in which all factors are carefully controlled. The Mantoux test, a potent and standardized old tuberculin being used, has proved quite satisfactory. The application of the test on family groups has given valuable information as to the intensity of exposure and source of exposure for each family member. The value of the tuberculin test has been so well proved that it must be included in any comprehensive program for the study and control of tuberculosis.

If, therefore, in the South, tuberculosis is a family problem, as I believe largely it is, its proper solution and control must revolve about the family physician as the pivotal point in such control. Until recent years the private practitioner has had a most difficult and unpleasant task in the handling of this disease in its many phases. The discouragingly low economic status of the population groups in which most of his cases have occurred has been a tremendous handicap.

The physician has been forced to depend on his own ability to diagnose and treat these cases without the facilities for confirmation or assistance with roentgen examination or expert consultation. State and municipal laboratories have been of considerable aid in sputum analysis; but when the records of these laboratories show an average of 20 per cent positive of specimens submitted, this would seem to indicate that this procedure has not been fully or intelligently applied.

The experience of Southern physicians shows that many cases are seen by them but a short time prior to death. This is particularly true in the case of the Negro. With this experience, coupled with the low economic status of the average patient and feeling that death is the usual and immediate outcome, the physician naturally does not wax enthusiastic over either diagnosis or treatment. Such cases cannot bring prestige even though all may have been done that is humanly possible in a short period of time. In the absence of proper institutional facilities, where surgical procedures might be used in selected cases and where cases are too far advanced for rest to be a possible factor in recovery, a physician may do very little in the way of medical skill, except to relieve final suffering.

Organized effort, therefore, which appreciates and strives to overcome the difficulties experienced by the key man—the family physician—seems to offer much hope for success. Teamwork of the finest sort and a sympathetic understanding should exist between each physician of the organized medical profession and the official county or municipal health department. The extent and complexity of the local problem must be presented to both the medical profession and the lay organizations. A study and summary should be made from existing records and presented in acceptable form to each group. It is only in this manner that a broad program acceptable to both physicians and lay groups may be prepared and executed which will have the whole-hearted and financial backing of all concerned. The official health organization should sponsor and lead in the education of the people and in the publicity and organization necessary to promote the effort. The methods of control advanced and stressed should be early diagnosis and treatment, isolation of all open cases, social investigation and adjustment of unfavorable environment, and intensive education of the public, especially those closely associated with the disease.

PROGRAM BASED ON LOCAL RESPONSIBILITY

A reasonable program which might be adopted for joint effort on the part of the physicians and the health organization should be laid down along the following lines:

1. A program of education, participated in by all interested agencies, the leadership to be furnished by the organized medical profession and the recognized official health bodies. Such a program should embrace newspaper publicity, lectures, radio talks, promotional work with families and contacts, tuberculin testing of family groups, arrangement for distribution of sputum cups, laboratory containers and pamphlets, and the institution of isolation procedures.

2. The investigation and study of the families in all deaths on record in any given community or area. This would include tuberculin testing of all contacts and examination of selected persons or families.

3. A complete survey of all families in which there exists a known, manifest case of tuberculosis, with the

inauguration of all recommended procedures for prevention of spread.

4. Classification of all suspects on record through local diagnostic facilities. This rather large group can thus be considerably reduced and permits of more intelligent effort where needed.

5. The stressing of the needs for local hospital and diagnostic facilities and the provision of funds necessary for their maintenance.

6. In the absence of proper hospital facilities, as is the case in many of the rural sections of the South, treatment of domiciliary tuberculous cases by the local medical profession, with the recognized agencies giving all possible aid in the matter of nursing and control services. This broad plan of cooperative effort is proving helpful in many sections in Alabama and is worthy of more extended trial.

These views, briefly and imperfectly expressed, spring from the concept of local responsibility on the part of each community, be it a township, county or what not, in regard to its own tuberculosis problem, as much so as the building of its almshouses, its jails, its schools or its roads. Spurred on by the insistent urge of its populace, many states have seen fit to take over, almost in toto, all their tuberculosis problems in much the same fashion as they have assumed the insane and eleemosynary burden. This is a financial load which many states, and more particularly in the South, in their present impoverished plight, will certainly experience difficulty in shouldering. When one considers the slow turnover in such institutions and the comparatively small percentage, usually not more than 15 or 20, of the total tuberculosis problem actually solved through this plan of state cooperation, one can but wonder whether this is either the sounder or the more economic channel of approach. No one, today, would question an important degree of responsibility on the part of the state; the question is rather how best this responsibility may be discharged. To assume the entire burden, as many states have already done, is one, but an expensive, way. For a state to form a partnership with its various political subdivisions whereby it participates both financially and in the stimulation of a local program of self aid certainly has much to commend it. The autonomy of local self government is thereby preserved and the initiative and independence of each political unit correspondingly enhanced. For these reasons, the development of the county or the district sanatorium plan, in which the state participates in both a financial and a supervisory way, seems to offer a method of approach which is sound, economically and basically, and which should form at least a beginning for those states whose finances will not justify a more pretentious program.

To such a modest approach in hospitalization can be added a statewide program of consultative and x-ray service such as is now being sponsored at many points. Such a scheme, as outlined, which seeks to attack the problem of control from the periphery rather than from the center, has been planned for Alabama.

PLAN OF LOCAL CONTROL

The problem of tuberculosis control within the several states presents so many variants and is of such complexity as to defy uniformity of approach or standardization of practice. What might apply to one state in affluent circumstances and with a largely urban population would not at all apply to another with a large rural or agricultural population and with cramped

financial resources. Into the latter category most of the Southern states fall. Because, also, of the fact that the county forms the political unit of government in the South to a greater extent than prevails in many Eastern states where the township dominates the political picture, organization for many types of health service has been simplified and expedited. In Alabama, for example, where up to now 80 per cent of the counties have been provided with all time health service, it is felt that the possibilities are promising of further expanding and superimposing on an already existing county setup a simple and workable plan of local tuberculosis control. Up to the present time, so far as my knowledge goes, no one has succeeded in clearly defining the salient points that should be incorporated into such a plan, nor has there been pointed out the superfluous things that need not be so incorporated. Some two years ago and because of the many shapeless gropings in which we were floundering, Alabama's health department set for itself this rather pretentious task. A tentative plan, embracing the cardinal points enumerated, was submitted to the International Health Board of the Rockefeller Foundation and an appeal made for financial aid in its prosecution. After an exhaustive study of every detail, including the proposed field of operation and the personnel to be employed, the foundation generously consented to make such a study financially possible. This study has been in progress now for one year.

In essence, its purposes are:

1. To determine the incidence of all manifestations of tuberculous infection under conditions that exist in a rural community and their potential significance in relation to clinically manifest tuberculosis.

2. To ascertain the principal channels of spread in a rural community and the factors that modify its transmission.

3. On the basis of the information thus obtained, to devise practical preventive measures suitable to local conditions.

The general plan of procedure will be as follows:

1. The family or household is the unit of study and all families in which there now exists, or where at some time a member has suffered with tuberculosis, will be the nucleus for the study of the disease.

2. The search for new cases will be conducted on a countywide basis, all available means being used.

3. A complete tuberculin survey will be undertaken to include (a) all school children, both white and colored; (b) adults and preschool children by precincts or beats; (c) municipal and industrial groups. This should serve to indicate the difference in the incidence of infection in town and rural areas.

4. In areas selected, on the result of tuberculin tests, an epidemiologic survey of the families within the areas will be made, with follow-up roentgen examination of selected positive reactors.

5. The clinic is mobile and equipped with portable x-ray apparatus. Seven convenient points within the county, where electric current is accessible, have been selected as clinic centers. Provision is always made in preparation of schedules to render prompt service in all cases referred by physicians. Such physician is provided with cards and stamped envelopes to facilitate the immediate reporting of cases.

6. A fully equipped laboratory is set up in the central clinic, located in Opelika. The value of frequent sputum examinations is emphasized to physicians and

patients. A minimum series of ten negative sputums or two successive positives is the strict policy. In all positive sputum cases, bimonthly specimens must be submitted. Specimen containers are stamped, six being given on the first visit, and are submitted by the patient on a prearranged schedule.

7. All families in which manifest tuberculosis exists are recorded individually, by family, and the observations for each family kept up to date on a family graph.

8. General educational measures are carried on both by the clinic and by the county health staff. Each manifest case is under the care of the physician chosen by the patient, and excellent cooperation is being had through the organized local profession.

9. When a sufficiently large group of manifest, sputum positive, tuberculosis cases have been discovered, over the age of 18 years, the preventive phase of the program will be initiated. This will consist of a division of these families into a study and control series. The only variant in procedure with the two groups will be the initiation of isolation of cases in the study group, the portable, screened cottage, separate screened porches and separate rooms being used when possible. All patients and contacts will be reexamined and serially roentgenographed at intervals.

10. The administration problem of rural tuberculosis control will be studied intensively in the entire county where hospital facilities are not available.

Department of Public Health.

A BENIGN FORM OF OSTEOMYELITIS OF THE SPINE

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Although osteomyelitis of the vertebral column generally is considered to be relatively uncommon, numerous case reports and descriptions of the condition have been published. With very few exceptions they have dealt with the very acute form associated with high temperature, marked prostration, frequent paralysis from involvement of the spinal cord, and with a high mortality. The impression is had from reading the textbooks and most of the articles on the subject that this is the generally accepted picture of the disease. Steindler¹ describes a milder form of infection, and Kidner² has reported three cases which ran a relatively benign course. From August, 1924, to December, 1932, sixteen cases of osteomyelitis of the spine have been collected from the records of the New York Orthopaedic Dispensary and Hospital and one other was seen in consultation. They indicate the occurrence of a milder form of the disease which, in this small series, was more frequent than the severe fulminating type. In eleven of the seventeen cases a diagnosis of tuberculosis of the spine was made either in the New York Orthopaedic Dispensary and Hospital or by orthopedists of recognized standing elsewhere. It seems probable that, just as many cases of pyogenic infections of joints are mistaken for tuberculosis, similar errors are made in osteomyelitis of the spine. Often it is difficult or impossible to obtain positive proof of the etiology of

From the clinic of the New York Orthopaedic Dispensary and Hospital.

1. Steindler, Arthur: *Diseases and Deformities of the Spine and Thorax*, St. Louis, C. V. Mosby Company, 1929.

2. Kidner, F. C.: *Low Grade Infections of the Vertebral Bodies*. Probably Staphylococcal, *J. Orthop. Surg.* 3: 459-464 (Sept.) 1921.

a vertebral infection, but other factors may make the assumption practically a certainty.

Of these seventeen cases, the vertebral bodies were involved in fourteen and the posterior arches in three. The course of the disease and the indications for treatment in the two groups are so dissimilar as to warrant their separate consideration. The average age of the patients when first seen was 31.5 years and the ages varied from 5 to 58 years. The average age at the onset of the infection was 29.5 years. This is a distinct point of difference from tuberculosis of the spine, which usually begins in early childhood. The lesions extended from the fifth dorsal to the fifth lumbar vertebra and tended to be grouped in the middorsal and midlumbar regions. One patient had two separate foci of infection in the spine and another had three.

The recognition of the condition offers no particular difficulty in the fulminating cases nor in those with posterior arch involvement, often with abscesses and sinuses. It is the type with a lesion in one or more bodies, with only slight or moderate elevation in temperature and with pain that may be described as being little more than a backache, which may be overlooked entirely or diagnosed as tuberculosis. These infections commonly follow others in different parts of the body for which the patient has been confined to bed, and when backache is complained of it is thought to be from some unimportant cause and no more attention is paid to it. As has been stated, in eleven of these patients a diagnosis of tuberculosis of the spine was made in this hospital or by orthopedists of wide repute in other cities. Suspicion that the lesions were caused by some other infection was aroused by the fact that they followed, or in one or two cases preceded, pyogenic lesions in other parts of the body. The diagnosis is further supported by evidence of a productive bone reaction about the lesion and tendency for early bony ankylosis of the bodies.

Laboratory proof of the etiology necessarily is lacking in many. Six patients had a high leukocytosis with an increase in polymorphonuclear cells. Since a number of the patients were not seen until some months after the onset, their blood picture during the early stage is unknown. A culture of *Staphylococcus aureus* was obtained from sinuses in four cases and directly from the bone in two. A growth of *staphylococcus* was obtained from the spinal fluid in two patients, both of whom had a paraplegia. Sections of tissue from abscess walls showed the picture of a nontuberculous chronic inflammation in four. Guinea-pig tests were done in two cases and were negative. The Mantoux test was positive and the Wassermann reaction was negative in eleven patients. Seven patients had draining sinuses and three had a psoas abscess. Abscesses in six cases required incision and drainage. Small sequestrums were extruded in two cases. Osteomyelitis occurred in other bones in four cases and other suppurative lesions in eight. One case followed typhoid and presumably was caused by this bacillus.

The onset was sudden in thirteen cases and gradual in four. In all, pain was the outstanding symptom. In some cases it was severe and in others it was described as hardly more than a backache. It was not relieved by rest. In this respect the symptoms were unlike those of tuberculosis of the spine. There was a history of fever in ten cases. Physical examination revealed a kyphos in only three cases and in none was it as prominent as in the average case of tuberculosis of the spine. This is accounted for by the fact that there rarely ever

is as much destruction of the vertebral bodies in osteomyelitis as in Pott's disease. Two patients had a spastic paralysis of the lower extremities soon after onset. In one it was severe and permanent. In the other it disappeared almost entirely.

As in tuberculosis, one of the earliest evidences of osteomyelitis in the roentgenogram is a thinning of the intervertebral disk. A slight haziness and indistinctness of the bone structure also may occur quite early. Especially in the dorsal region, a fusiform paravertebral abscess shadow, resembling that in tuberculosis, is to be seen in the roentgenogram. Somewhat later, productive bone changes usually are seen about the periphery of the bodies and across the margins of the intervertebral space. There is a strong tendency for bony fusion of the bodies to take place. The important roentgen observations in this group of cases were: thin intervertebral disk, two; thin disk with partial destruction of bodies, five; partial destruction of bodies with bony ankylosis, six; partial destruction of bodies with probable ankylosis, four; destructive lesions of posterior arches, three.

It thus will be seen that while the evidence that these infections were caused by a pyogenic organism was in most cases circumstantial, it was so strong as to make the diagnosis of tuberculosis highly improbable.

The problem of treatment is now to be considered, first in the group of patients with lesions of the vertebral bodies, fourteen in number. One patient, a girl of 14 with a very severe infection and early involvement of the spinal cord, had a laminectomy performed in another hospital. She survived but remained completely paralyzed and bedridden.

Eight patients had an operation for fusion of the spine, most of them on the assumption that they had tuberculosis of the spine. One still has draining sinuses and advanced amyloidosis nine years after operation. Another still had discharging sinuses when last seen, one year after operation, but his general condition was much improved. The remaining six were in good health with no symptoms from their backs and with wounds healed. The patient with the typhoid infection had severe pain in his back for twelve years until his spine was fused, after which it ceased.

Four patients who were treated conservatively with braces and rest also are free from symptoms and are carrying on their normal activities without wearing any supports. In three, the bodies have fused and in the fourth they have almost done so. A fifth patient in whom psoas abscess was the prominent initial symptom and whose spinal lesion was not discovered until eight years later still has a lumbar abscess and draining sinus. The bodies became fused spontaneously. One of the patients in the spine-fusion group was operated on because of pain which really was caused by fracture of a spinous process at the apex of the kyphos. The bodies and laminae in one area already were fused spontaneously and the laminae in the area of the dorsal focus were partly fused. It is fair to say, therefore, that she had a spontaneous cure of her osteomyelitis.

The results in the three patients with lesions of the posterior arches were less encouraging. The roentgenograms of one showed large irregular masses of bone arising from the transverse processes and infiltrating the psoas muscle. One lateral articulation had been destroyed. He was relieved for several months after fusion of the spine, but, following a return of symptoms, an abscess was drained in the right psoas muscle and the infiltrating masses of bone were removed. His

sinuses have been closed and he has been free from symptoms for one year. The two remaining patients have draining sinuses which repeatedly block up and which have required frequent incisions for drainage.

CONCLUSIONS

1. Osteomyelitis of the vertebral bodies occurs quite frequently in a comparatively mild form which may easily be mistaken for tuberculosis.

2. These lesions have a marked tendency to cause spontaneous bony fusion of the vertebral bodies. They should be treated conservatively until it is certain that a cure will not result in this way.

REPORT OF CASES

Two typical case histories follow:

CASE 1.—A. S., a man, aged 58, had a series of infections in January, 1925, including osteomyelitis of the right humerus and left tibia, and suppurative arthritis of the left knee following a furuncle on the scalp. Empyema developed on the left side and was drained. Later an abscess in the right sixth rib was drained. Staphylococcus aureus was recovered from each of these lesions. In October, he was admitted to St. Luke's Hospital for a partial intestinal obstruction, which was relieved by conservative measures. He had complained of pain in the dorsal region of the back since April, 1925. Examination in October revealed a small kyphos at the tenth dorsal vertebra and a roentgenogram showed destruction of the disk between the ninth and tenth dorsal vertebrae and cavitation of the bodies. There was slight swelling of the soft parts about the lesion and marked osteo-arthritic changes throughout the dorsal region. It was thought that he had tuberculosis of the spine and he was transferred to the New York Orthopaedic Dispensary and Hospital.

The patient was fairly well nourished; all his movements were protective. His temperature was slightly elevated; the Mantoux test was positive, and the Wassermann test was negative; the red blood count was 4,480,000; white blood count, 11,900; polymorphonuclears, 65; eosinophils, 4; lymphocytes, 31. An operation for fusion of the spine from the ninth to the twelfth dorsal vertebra, inclusive, was done, November 16. The wound healed by primary union but several weeks later a sinus appeared at the lower end of a scar, from which a culture of Staphylococcus aureus was obtained. This closed in January, 1926, after the extrusion of two small sequestrums. He was last seen in January, 1932, at which time he was in good health; all wounds were closed with the exception of a sinus leading to the sixth right rib. A roentgenogram showed solid fusion of the bodies of the ninth and tenth dorsal vertebrae, as well as of the posterior arches of the ninth to the twelfth dorsal.

CASE 2.—J. D., a woman, aged 50, had a carbuncle on her scalp in January, 1929. Shortly afterward, an infection developed in her right foot, necessitating incision and drainage. It was discovered that she had diabetes, which was controlled with insulin and diet. In February, a cholecystectomy was performed for an empyema of the gallbladder. The cultures from all these infections grew Staphylococcus aureus. While in the hospital, she complained of pain in the back, which was attributed to the cholecystitis. It continued after her discharge from the hospital, however, and became more severe. In the latter part of May, roentgenograms were taken which showed destruction of the disk between the ninth and tenth dorsal vertebrae and of the adjacent portions of the bodies with slight kyphosis. There was a soft part swelling adjacent to the vertebral bodies extending up and down from the site of the lesion. Arthritic lipping was present in the dorsal spine. All movements of the trunk caused pain in the dorsal region. The red blood cells were 4,720,000 per cubic millimeter; hemoglobin, 73 per cent; white blood count, 6,500; polymorphonuclears, 77.5; lymphocytes, 22.5. The roentgenograms were thought to be typical of tuberculosis but it was decided that because of the other lesions and the persistent quite severe pain, the condition was probably osteomyelitis of the spine. A Taylor back brace was applied and she was kept in bed for

four months. The pain gradually subsided and subsequent roentgenograms showed increasing density of the ninth and tenth dorsal bodies and diminution in the surrounding swelling. The last roentgen examination, in January, 1930, showed apparent bony ankylosis of the ninth and tenth bodies. The patient was then in good general condition, free from pain, and was up and about with only a corset for support.

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THE RELATION OF DIPHYLLOBOTHRIUM LATUM INFESTATION TO THE PUBLIC HEALTH

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If there be glory in prophesying an evil event, the honor in one instance belongs to Stiles,¹ who, the year following the published record of the first case of infestation with *Diphyllbothrium latum* native to the United States, and six years after the report of the first Canadian case, predicted that infestation with this parasite, the broad tapeworm, would become endemic in the United States. That this has come to pass can be readily demonstrated from the record here to be given and from previously published records; at least forty-one persons born and residing in the United States, and two in Canada, are definitely known to have harbored the parasite (table 1). Numerous other native cases are unrecorded, while many persons, although born in foreign countries, have surely acquired the worm in North America. In addition to this, it has been proved by Magath² and by Essex³ and confirmed by Vergeer⁴ and by Nicholson⁵ that the life history of the parasite is completed both in the United States and in Canada. The infestation of certain fishes in North American waters has been demonstrated by these observers.

From the experimental results of Magath and Essex,⁶ one may conclude that in North America the life history of the parasite takes place in the colder lakes of the country. The major first intermediate hosts are diaptomi and such species as abound in the northern belt of lakes; these species include *Diaptomus oregonensis*, *sicilis* and *siciloides*. It is possible that some cyclops also can serve because of the proof that *Cyclops strenuus* in Europe is a suitable host.

The fish hosts for the main part are *Esox lucius*, the pickerel or great northern pike; *Stizostedion vitreum*, the wall-eyed pike, and *Perca flavescens*, the perch.

It can be seen from table 2 and the map that the lakes from which infested fish have been procured are in the north central portion of the United States and adjacent to the infested lakes of the south central por-

From the Section on Clinical Pathology, the Mayo Clinic. Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Stiles, C. W.: Taeniasis-Cestode Infection, in Osler, William, and McCrae, Thomas: Modern Medicine, ed. 1, Philadelphia, Lea Brothers & Co., 1907, pp. 567-568.

2. Magath, T. B.: Preliminary Report, 1927; Experimental 10: 614-616 (Oct.) 1927.

3. Essex, H. E.: Early Development of *Diphyllbothrium Latum* in Northern Minnesota, J. Parasitol. 14: 106-109 (Dec.) 1927.

4. Vergeer, Teunis: *Diphyllbothrium Latum* (Linn., 1758), the Broad Tapeworm of Man: Experimental Studies, J. A. M. A. 90: 673-678 (March 3) 1928.

5. Nicholson, Daniel: Fish Tapeworm: Intestinal Infection in Man; the Infestation of Fish in Manitoba Lakes, Canad. M. A. J. 19: 25-33 (July) 1928.

6. Magath, T. B., and Essex, H. E.: Concerning the Distribution of *Diphyllbothrium Latum* in North America, J. Prev. Med. 5: 227-242 (July) 1931.

tion of Canada. These lakes belong to restricted water sheds, one of which includes northern Minnesota and southern Manitoba, draining north to Hudson Bay. A second embraces lakes in northern Minnesota, southern Ontario and Michigan and drains into Lake Superior, while a third includes two lakes in Alberta which drain northwestward. There is direct continuity of the waters of the first two areas.

TABLE 1.—List of Forty-Three North American Native Cases

| Author | Date | No. of Cases | Residence or Region |
|-------------------------|------|--------------|---------------------------------------|
| Hamilton..... | 1901 | 1 | Montreal |
| Nickerson..... | 1906 | 1 | Ely, Minn. |
| | 1911 | 1 | Hennepin County, Minn. |
| Warthin..... | 1912 | 1 | Hancock, Mich. |
| Riley..... | 1919 | 1 | White Earth Indian Reservation, Minn. |
| | 1919 | 1 | Minneapolis |
| Calvin..... | 1922 | 2 | Chicago |
| Wallace and Grant.. | 1922 | 1 | Decatur, Ind. |
| Lyon..... | 1926 | 1 | South Bend, Ind. |
| Levy and Pierson..... | 1926 | 1 | Detroit |
| McGayran and Songkin.. | 1928 | 2 | Boston |
| Warthin..... | 1928 | 2 | Detroit |
| Nicholson..... | 1928 | 1 | Winnipeg |
| Pilot..... | 1928 | 1 | Chicago |
| Vergeer..... | 1928 | 1 | Milwaukee |
| Parson..... | 1929 | 2 | Minneapolis |
| Wilder and Rodda.. | 1929 | 2 | Minneapolis |
| Ingall and Freeman..... | 1930 | 1 | Malden, Mass. |
| | 1930 | 1 | New York |
| Myers..... | 1930 | 2 | Minneapolis |
| Pilot and Levin..... | 1931 | 5 | Chicago |
| Plotz..... | 1932 | 5 | New York |
| Waters and O'Connor. | 1932 | 3 | New York |
| Magath..... | 1933 | 1 | Chicago |
| | 1933 | 1 | Boone, Iowa |
| | 1933 | 1 | Chisholm, Minn. |

At first sight one might think that the native cases reported are quite widely scattered; yet in reality such is not the case from the standpoint of their possible source of infestation. Three fourths of the cases reported were located in the central lake region of North America, coincident with the source of infested fish. With the exception of one case, the others were reported from two metropolitan regions in the East. While it is possible that Eastern lakes are infested, the evidence suggests that the Eastern patients acquired their infestation from fish shipped into their markets from the infested lakes of the Central region. Indeed, this is probably true of many of the other cases. The evidence for this is contained in two considerations. First, more than 75 per cent of pike and pickerel sold in the markets of the United States are caught in the Canadian lakes which harbor heavily infested fish; second, the persons reported infested are practically exclusively Jewish women, who have been shown by Barron⁷ and by Nicholson to acquire the infestation by tasting gefüllte fish as it is being prepared. For this dish, pike and pickerel are frequently used. Most of the patients in the unreported native cases are presumably males and females of the Finnish and Scandinavian races. These patients almost exclusively dwell about the infested lakes and have acquired their infestation by eating their own catch either raw, with or without seasoning, or cold smoked.

There is no evidence to support a theory that the worm has been indigenous to this continent for more than a comparatively short time. The first cases reported were after the beginning of emigration from the Baltic region and other European endemic areas. Leidy first identified the worm in this country in 1879 from one of Walker's patients. Although cases have

been reported fairly regularly from then on, no native case was reported until 1901; this is a little more than a decade after the rather sudden and large emigration from Baltic countries to the iron mining areas of Michigan and Minnesota and the first wave of Jewish emigration to Winnipeg from Lithuania, countries in which the infestation of *D. latum* runs from 15 to even 95 per cent of samples of the population studied. It is definitely known that many of these people brought, besides their baggage, anywhere from one to five or six healthy tapeworms.

The method by which our natural waters have become infested is evident. Both intermediate hosts are present in the areas settled by these peoples in the past, and even today in most of these regions raw sewage is emptied from the towns into the lakes. Lyon⁸ has estimated that more than 1,000,000 ova are discharged each day by a *Diphyllbothrium* carrier. Even when settling equipment is present it does not operate against the eggs in some instances and certainly not against the hatched larvae. The people, maintaining their European custom in regard to tasting or eating raw fish, have kept the parasitic life cycle constantly going and growing until in some lakes almost every susceptible fish is infested.

The exact method by which the infested fish are spread to other lakes and the method by which new lakes are infested is of great importance. There are clearly two ways in which this can take place. Fish may migrate from one lake to another through continuous water passages and this may account for the occasional finding of infested fish in some lakes. The degree of migration of fish is unknown but it is known that some seasonal migration does take place. The second method is economically important. Certain fish hatcheries are situated on infested lakes and, since plankton are readily eaten by the hatchery fish, some fish may become infested and thus be transported to lakes in which otherwise no infestation would occur. This may account for the isolated finding made in East Okoboji Lake. What part the migration of infested plankton plays is unknown.

TABLE 2.—List of North American Lakes Known to Harbor Infested Fishes

| Author | Lake | Region, State or Province | Degree of Infestation |
|------------------|-------------------|---------------------------|-----------------------|
| Magath..... | Burntside | Ely, Minn. | Medium |
| | Long | Ely, Minn. | Heavy |
| | Winnipeg | Manitoba | Heavy |
| Magath and Essex | Vermillion | Tower, Minn. | Light |
| | Devil's Track | Minnesota | Medium |
| | Fall | Winton, Minn. | Heavy |
| Vergeer..... | Portage | Michigan | Medium |
| | Superior (shore) | Michigan | Light |
| | Lake of the Woods | Minnesota | Very light |
| | Basswood | Minnesota | Very light |
| | Nipigon | Ontario | Heavy (?) |
| | Manitoba | Manitoba | Light |
| | Lac La Biche | Alberta | Very light |
| | Lesser Slave Lake | Alberta | Very light |
| Ward..... | East Okoboji | Iowa | Very light |

However, for the most part fish in lakes have become infested and the infestation maintained through the agency of sewage containing human excreta. The evidence for this is that only those lakes are heavily infested into which sewage is emptied from towns in which people reside whose custom it is to eat fish, either raw or underdone. These are the people from the European countries in which a large percentage of

7. Barron, Moses: Infestation with *Diphyllbothrium Latum*, Fish Tapeworm, with Especial Reference to Native Cases, J. A. M. A. 92: 1587-1593 (May 11) 1929.

8. Lyon, M. W.: Native Case of Infestation by the Fish Tapeworm, *Diphyllbothrium Latum*, J. A. M. A. 86: 264-265 (Jan. 23) 1926.

infestation occurs. The survey of Magath and Essex and the work of Vergeer⁹ clearly have demonstrated that.

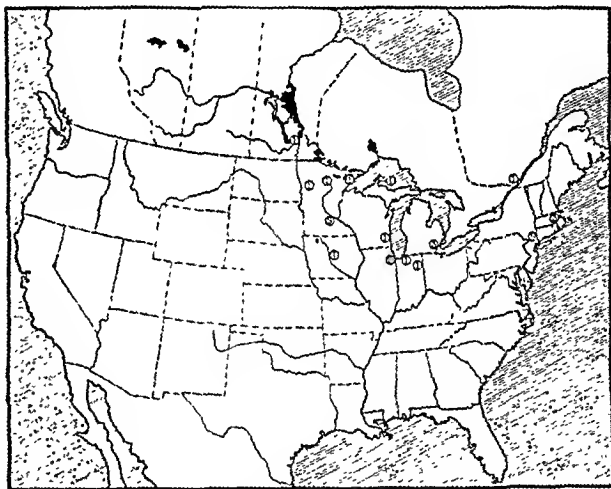
Closely associated with this problem is the part played in dissemination of the parasite by wild and tame animals, such as the wolf, fox, bear and dog, in which the worm will grow. If wild canines and bears spread the disease, one should find lakes off the beaten path infested. This is not the case. The heaviest infestation occurs in lakes on the banks of which towns or cities or lumber and fishing camps are situated; lakes of which the fish are least infested are in remote places.

The specific part played by the bear is still a matter of speculation. Ward¹⁰ has by several sentences implied he has found *D. latum* in bears but his evidence has not been produced. Skinner¹¹ reported that she obtained such worms from bears of Alaska and Rush¹² from bears of Yellowstone Park. These are the only positive statements that *D. latum* has been found in wild bears. Vergeer reported finding eggs in feces of bears in nature. That these were *D. latum* cannot be proved, since the ova of members of the genus are too nearly alike to allow species to be distinguished. Scott¹³ has carefully studied the worms collected by Rush and also those in his collection from Yellowstone Park and feels sure that they are not *D. latum*. They may be *D. cordatum*, according to him, or more likely a newly recognized species. Plerocercoids from trout of the Yellowstone have been fed to human beings¹⁴ without success. In view of these observations, considerable doubt is cast on the previous records of the occurrence of *D. latum* in wild bears and no one knows how viable ova from this source would be.

The part the dog plays is clear and has been pointed out by Essex and Magath.¹⁵ A large number of heavily infested dogs roam around Burntside Lake and Long Lake, both near Ely, Minn., yet the fish of Burntside Lake are not more than one-tenth as heavily infested as those in Long Lake. The former receives practically no sewage, the latter the sewage from the city of Ely. There are three reasons why the dog cannot be a large factor in this problem, although he must play some part. In the first place these tapeworm eggs from the dog are of low viability; as compared to those from man, about 1 to 80. In the second place, these eggs are readily killed by drying and by cold. Both actions affect the eggs in feces of dogs, since they are deposited in situations which do not protect them. Although dogs are used on northern lakes for running supplies in the winter, freezing of their feces kills the ova in a few hours. Lastly, it is only chance when the feces of dogs are so deposited that rains wash the eggs into the proper lakes before the time limit for their hatching is past. As contrasted with these conditions, one must recall that feces of man are deliberately passed into the lakes by the sewage systems of towns and from the toilets of boats.

Why are not all bodies of natural waters polluted into which eggs of this tapeworm pass? It will be at once evident that no lake or stream will be a source of these tapeworm larvae unless the proper species of fish are present, and, secondly, unless the proper first intermediate hosts are also in abundance. So far as is known, these species of copopods are primarily northern lake forms and that explains the absence of the larvae in susceptible fish in rivers and streams. Aside from these considerations and those having to do with the chance elements in this intricate life cycle, the type of lake must be a tremendous factor.

In the Great Lakes, where there is a modified thermocline but no turnover, there is little or no infestation of fishes, yet it is reasonable to suppose that countless viable eggs have been deposited in them. The eggs are relatively very heavy and settle to the bottom, where the temperature is constantly so low that hatching never takes place. That no development takes place at such temperatures has been proved experimentally. In shallow lakes in wind-blown areas, such as Lake Winnipeg, the temperature of the water is practically the same throughout and the eggs can hatch during many months



Distribution of reported native cases of *Diphyllbothrium latum* and lakes known to harbor infested fish. Situation and number of cases are recorded by circles enclosing numerals, whereas lakes with infested fish are indicated by solid black areas.

in the year. In deeper lakes, even where there is a thermocline, if a spring and fall turnover exists development can also take place.

The question of the effect of the tapeworm on the human host is important. Birkeland¹⁶ has, in a masterful manner, presented this phase of the problem. In general it is evident that the effect has been greatly overemphasized, chiefly by those who have not had clinical experience with the patients. As an illustration, recently Faust¹⁷ stated: "The presence of *Diphyllbothrium latum* in man produces a more or less profound secondary anemia." He then gave the definite impression that this was the rule and that the anemia is severe. The fact is that when anemia occurs it is of the "primary" type but this is extremely rare. One must search the literature very carefully to find examples of such cases unless the Finland literature is examined. Even then the incidence will be of the order

9. Vergeer, Teunis: Canadian Fish, a Source of the Broad Tapeworm of Man in the United States, *J. A. M. A.* 90: 1687-1688 (May 26) 1928; New Sources of Broad Tapeworm Infestations: Report of Fourteenth Native Case, *ibid.* 91: 396-397 (Aug. 11) 1928.

10. Ward, H. B.: Animal Parasites, in Abt, I. A.: Pediatrics, Philadelphia, W. B. Saunders Company 8: 912-1065, 1926.

11. Skinner, M. S.: *Diphyllbothrium Latum* from Bears in North America, *J. Parasitol.* 18: 55 (Sept.) 1931.

12. Rush, W. M.: *Diphyllbothrium* in Bear, *J. Mammalogy* 13: 274-277 (Aug.) 1932.

13. Scott, J. W.: Personal communication to the author.

14. Woodbury: Personal communication to J. W. Scott.

15. Essex, H. E., and Magath, T. B.: A Comparison of the Viability of Ova of the Broad Fish Tapeworm, *Diphyllbothrium Latum*, from Man and Dogs: Its Bearing on the Spread of Infestation with This Parasite, *Am. J. Hyg.* 14: 698-704 (Nov.) 1931.

16. Birkeland, Ivar: "Botriocephalus Anemia," *Medicine* 11: 1-139 (Feb.) 1932.

17. Faust, E. C.: The Metazoal Diseases, in Musser, J. H.: Internal Medicine, Philadelphia, Lea & Febiger, 1932, p. 305.

of only 0.01 per cent and mathematically a negative correlation exists. In all literature only about 550 cases of anemia have been reported, of which about 400 affected Finlanders, yet Finland has no higher incidence of infestation than certain parts of Sweden. In Amer-

even mild anemia. The evidence is clear that other factors are at work to produce the syndrome of anemia in the presence of infestation with *Diphyllobothrium*, and the worm can at best be considered only a trigger to set off the illness.

TABLE 3.—Cases of Infestation with *Diphyllobothrium* Encountered at the Mayo Clinic

| Case Sex and Age, Years | Previous Residence | Present Residence | Years in North America | Date of Admission at Clinic | Time Before This Writing | | Symptoms and Complaints | Attending Conditions | Hemoglobin, per Cent (Dare) | Erythrocytes, Millions | Leukocytes, Thousands | Eosinophils, per Cent | Comment |
|-------------------------------------|-----------------------|----------------------|---------------------------------|--------------------------------------|---|--|--|---|-----------------------------------|---------------------------|--------------------------|--------------------------|--|
| | | | | | Of First Observation of Segments | Of Last Observation of Segments | | | | | | | |
| 1 ♀, 40 | Poland | Chicago | 48 | 10/ 8/20 | 6 yrs. | ..... | Indigestion; nervousness; headache; idea of self destruction | Mild depression; chronic tonsillitis | 78 | 4.52 | 5.6 | 1.0 | <i>D. parvum</i> ; eats smoked fish |
| 2 ♀, 33 | Russia | Winnipeg | 17 | 12/ 7/20 | 2 yrs. | 4 mos. | Weakness; nervousness; loss of weight | Exophthalmic goiter | 70 | 4.56 | 8.0 | 1.5 | |
| 3 ♀, 56 | Russia | Minneapolis | .. | 5/ 1/23 | 3 yrs. | 8 wks. | Pain in right leg; sleeplessness | Hypertension | 79 | 4.78 | 12.0 | 2.0 | |
| 4 ♀, 39 | Russia | Winnipeg | 38 | 10/ 5/23 | 2 yrs. | 6 wks. | Insomnia, nervousness | Hypertension; lipoma | 75 | 4.29 | 6.8 | 2.5 | Heavy eater of lake fish; son passed segment at 2 years of age |
| 5 ♂, 36 | Finland | Calumet, Minn. | 13 | 3/10/24 | 15 yrs. | 1 wk. | Nasal obstruction | Syphilis of nose; urethritis | 75 | 4.56 | 8.8 | 3.5 | Heavy eater of fish; "knows he brought his worm to America" |
| 6 ♀, 21 | Lithuania | Chicago | .. | 6/ 7/24 | ..... | 6 mos. | "Flits," nervousness; "pains all over" | Epilepsy; chronic glomerular nephritis | 67 | .... | 9.9 | ... | |
| 7 ♀, 50 | Austria | Winnipeg | 36 | 8/26/24 | 5 yrs. | 6 mos. | "Tapeworm" | Essential hypertension | 74 | .... | 6.7 | ... | When child, passed long white worm; no more until five years ago |
| 8 ♀, 28 | Poland | Thunins, Ont. | 10 | 11/12/24 | 5 wks. | 2 wks. | Sterility; pain in healing fracture | Healing Pott's; syphilis | 76 | 5.10 | 4.3 | 2.0 | Eats no imported fish, but much local smoked fish |
| 9 ♀, 46 | Roumania | Minneapolis | 26 | 3/20/25 | 5 wks. | 5 wks. | Backache for twenty years | Septic tonsils | 80 | 4.63 | 7.4 | 1.0 | Tastes raw fish when cooking; last summer ate fish from Lake Nereva |
| 10 ♀, 33 | Russia | Chicago | 26 | 5/ 4/25 | 4 mos. | 4 mos. | Indigestion; nervousness | Chronic tonsillitis; diabetes; chronic cholecystitis | 74 | 4.30 | 8.8 | 2.5 | Eats smoked fish |
| 11 ♀, 45 | Russia | Chicago | 15+ | 8/14/25 | 6 yrs. | 2 mos. | Vague pains for twenty years | Neurosis; achlorhydria | 76 | 4.25 | 8.1 | ... | |
| 12 ♀, 30 | Russia | Winnipeg | 12 | 11/22/26 | Never observed | | Bearing down pains 3 months | Cervical erosion; hemorrhoids | 75 | 4.50 | 8.0 | 1.5 | Eats smoked fish often, herring |
| 13 ♂, 16 | Finland | Rochester, Minn. | 1½ | 4/22/29 | 2½ yrs. | ..... | None | None | 80 | 4.96 | 6.6 | ... | Free HCl; eats raw fish |
| 14 ♀, 30 | Chicago | Chicago | 30 | 10/21/29 | Never observed | | Cramps; diarrhea | Osgood-Schlatter disease; dental sepsis | 102 | 4.92 | 10.9 | 4.5 | Eats raw fish frequently; free HCl |
| 15 ♀, 41 | Russia | Winnipeg | 24 | 12/ 9/29 | 1 yr. | 2 wks. | Nervousness; pain in abdomen | Cervicitis; chronic nervous exhaustion | 82 | 4.66 | 5.0 | ... | Tastes raw fish often; free HCl |
| 16 ♀, 44 | Russia | Winnipeg | 15 | 7/ 1/30 | 6 mos. | 1 wk. | General pain | Colloid goiter | 78 | 4.44 | ... | 1.5 | Free HCl |
| 17 ♀, 36 | Boone, Iowa | Boone, Iowa | 36 | 7/23/30 | ..... | ..... | Pain in tongue | Epithelioma of tongue | 92 | .... | 8.9 | ... | Swedish parents |
| 18 ♀, 29 | Chisholm, Minn. | Chicago | 29 | 7/14/30 | 22 yrs. | 12 mos. | Constipation; deafness | Nervous exhaustion | 74 | 4.03 | 4.7 | 1.0 | Eats salted fish; free HCl; Finnish parents |
| 19 ♂, 62 | Finland | Houghton, Mich. | 39 | 10/13/30 | 50 yrs. | 3 wks. | Stomach trouble | Arteriosclerosis; secondary anemia | 62 | 3.99 | 4.5 | 1.0 | No free HCl; two worms |
| 20 ♀, 43 | Poland | Chicago | 27 | 12/ 8/30 | 1 day | 1 day | Pain in chest | Cholelithiasis | 76 | 4.73 | 6.2 | 2.0 | Tastes raw fish |
| 21 ♀, 45 | Poland | Detroit | .. | 9/25/31 | 9 yrs. | 2 wks. | Gastric distress | Chronic nervous exhaustion | 88 | 4.38 | 6.2 | ... | Eats smoked and pickled fish; free HCl; two worms |
| 22 ♀, 34 | Poland | Chicago | 18 | 6/14/32 | 1 yr. | 6 mos. | Itching eyes | None | 80 | 4.28 | 7.3 | 1.5 | Tastes fish in cooking; free HCl |
| 23 ♀, 45 | Russia | Woonsocket, R. I. | 40 | 5/30/32 | 6 mos. | 1 mo. | Soreness in breast | Fibroids | 76 | 4.39 | 7.8 | 0.5 | Free HCl; eats raw fish |
| 24 ♀, 52 | Russia | Minneapolis | 35 | 10/ 4/32 | 35 yrs. | 9 yrs. | Nervousness | Cholecystitis; hypertension | 80 | 4.64 | 10.5 | 1.0 | No free HCl |
| 25 ♀, 50 | Russia | Winnipeg | 12 | 3/ 1/33 | 2 yrs. | 2 yrs. | Pain (legs and shoulder) | Varicose veins; cystocele | 85 | 4.12 | 7.0 | ... | Eats raw fish; free HCl |

ica thirty-six cases have been reported; none of these have affected native Americans but twenty-one, Finlanders. None of the infested patients who have come to the Mayo Clinic (table 3) have exhibited any degree of anemia which could not be explained on other grounds than the infestation, and only two have had

The worm may, on the other hand, give rise to other symptoms. These are not different from those caused by other tapeworms and are just as indefinite. The patient's knowledge of the infestation is the keynote in most of the symptoms, which as a rule have to do with nervous manifestations.

With a knowledge of the fundamental facts concerning this disease, measures of control should be instituted along the following lines:

1. All sewage should be treated with some killing solution, such as formaldehyde or chlorine, before being discharged into lakes or streams.

2. People should be taught the necessity of thorough cooking of fish. "Gefüllte" fish should not be tasted during preparation for the table.

3. It has been demonstrated by Kjava¹⁸ and by Magath and Essex that submitting infested fish to temperatures of -10°C . for from twenty-four to forty-eight hours kills the larvae. Therefore freezing methods should be instituted in commercial houses that pack susceptible fish obtained from lakes known to be polluted.

4. Some system should be inaugurated for reporting human cases of infestation and isolating the infested persons until they are freed of the worm.

5. Stools of all Baltic immigrants should be examined.

6. A campaign should be undertaken to prevent feeding dogs with raw fish of the varieties known to be susceptible to infestation with *Diphyllbothrium latum*.

7. Further surveys of lakes and streams should be made in order to discover the extent of infestation of fishes.

ABSTRACT OF DISCUSSION

DR. MOSES BARROW, Minneapolis: Dr. Magath, along with Essex, Nicholson and Vergeer, has definitely proved that fish tapeworm infestation has become native in America. In 1928 I reported nineteen cases of this infestation, four of which were definitely native cases. Since then I have seen four or five cases a year, so that I could now add another twenty-five or thirty cases. The suggestions made by Dr. Magath are important in the control of this disease. Perhaps the fish-eating population could be reached by circulars passed out with each order of fish, stating that some of the fish may be infested and that the fish should be cooked thoroughly before being tasted. The disposal of sewage is a very important matter. I was interested in Dr. Magath's statement that many of the lakes in which there are fish hatcheries are infested. That certainly ought to be stopped at once. No fish hatcheries should be located in lakes that have already proved to be infested. It is simple to free patients from infestation. The present method of treatment is so simple, takes so little time of the patient, only perhaps three or four hours in the hospital, that all patients can be convinced that they should be freed of this infestation immediately. The possibility of further infestation in human beings could be eliminated later on by the freeing of all those known to be carriers at the present time and by proper isolation of the lakes known to be infested. As Dr. Magath stated, there are no definite symptoms.

DR. M. W. LYON, JR., South Bend, Ind.: From my limited experience I have seen no harm result from infestation; in fact, the presence of the fish tapeworm seems to be as harmless as that of the more common beef tapeworm. Dr. Magath has probably erred on the side of conservatism in calling cases native infestations. Many native cases occur in adult foreigners who were free of infestation when they left home. The last case I reported was in a well nourished Jewish woman who had been in the United States many years and only recently had noticed the parasite. She frequently made gefüllte fish and described the process of making it to me. Dr. Magath has pointed out the simple measures to be employed in protecting the northern lakes from sewage, as well as how to handle and prepare fish in order to destroy the larval forms of the tape-

worm. The latter measures are probably more practicable than the sterilization of sewage, especially in these days of limited municipal finances. If fully carried out, it would lead to extinction of the fish tapeworm. Dr. Magath's recommendation that the stools of Baltic immigrants be examined for this parasite is a good one. That the parasite requires a cold climate for its life cycle is well shown by the seasonal incidence of *Diaptomus oregonensis* in the St. Joseph River at South Bend, Ind. Mr. John Dolley of the University of Illinois did considerable work on studying the plankton and other life of this river. Several summer collections failed to reveal any *D. oregonensis*, but November and December collections yielded numerous examples of this species. The St. Joseph River is so polluted in the immediate vicinity of South Bend that the intermediate fish hosts cannot live in it. I wish that Dr. Magath would say something in his concluding remarks on the subject of heavy infestation of adult fish hosts. If I understand the matter correctly, the adults do not become infested by eating the diaptomi directly but by eating smaller fishes that have eaten them.

DR. THOMAS MYERS, St. Paul: I have seen five instances of this infestation in native born American children in St. Paul, all of them of Jewish parentage. They were all infested in the same manner; that is, they were permitted to taste particles of this incompletely cooked gefüllte fish. In every case the diagnosis was made by the appearance of large segments of the worm in the stools. The children have practically no symptoms aside from occasional cramps. I have yet to see a case of anemia occurring in children, nor has any been mentioned in the literature. There have been several reports of this infestation in children by Rodda and Wilder of Minneapolis and by Pilot of Chicago, who observed a fairly large series. Many instances are called tapeworm infestation without an attempt to differentiate between the beef tapeworm and the fish tapeworm. Oleoresin of aspidium is employed, sometimes pelletterine. It would seem that active propaganda in teaching people not to eat uncooked fish would rapidly eliminate this parasite, as the fish must indirectly be infested by human excreta.

DR. W. S. LEATHERS, Nashville, Tenn.: How many parasites may be found in one person? Reference was made to the number of eggs discharged from a person per day and it would be of interest to know the approximate number of parasites responsible for the number mentioned. I have had no experience with this parasite and an answer to this question would be of interest to me.

DR. THOMAS B. MAGATH, Rochester, Minn.: In regard to the last question, I have seen one patient with four worms; more than four have been reported. The vast majority of patients have one or two worms and that makes a difference in the number of eggs passed in the feces. Dr. Lyon's finding of 1,000,000 eggs per patient is a conservative figure. I have had occasion to estimate the number of eggs on several occasions and it has run much higher. The figure was published by Dr. Lyon; he is a competent observer and certainly his estimate is not too great; if anything it is too low, and many patients will excrete many more than 1,000,000 eggs a day. Concerning the habits of the Finlanders and other Europeans in eating raw and insufficiently cooked fish, the subsequent generations in this country are doing it less and less; however, the Finlander is still fond of this food, sometimes ripened a bit, then seasoned with vinegar and salt. The number of larvae that are found per fish varies from a few to as many as seventy-five or eighty larvae per fish. Apparently the older the fish gets, the more larvae he gets, although information is not complete. The plankton forms, diaptomi and cyclops, are eaten by young fish. The larger fish can become infested by eating smaller fish, the smaller fish having infective larvae in the stomach at the time. That has been demonstrated experimentally and it undoubtedly happens, how frequently I do not know; but the great northern pike is often found with the stomach literally loaded with smaller fish, and in the stomachs of the smaller fish, in turn, one may find infested diaptomi. The treatment is very simple, very satisfactory, and there is no reason why it should not be employed as a routine in these cases.

¹⁸ Kjava, Y.: Några iaktagelser rörande den breda bandmaskens (*Bothriocephalus latus*) blås kosk Finska läk-sällsk. handl. 55: 770-777, 1913.

PUBLIC MEDICAL CARE IN NEW
YORK STATE

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To what extent does the state now assume responsibility for the medical care of its citizens? In this paper I attempt to answer the question through an analysis of existing laws and current practices in the state of New York.

Through a succession of far-reaching laws for human welfare, the state and local governments in New York already have become responsible for many and diverse types of medical care, supplementing traditional preventive health functions.

The treatment of mental disease, for example, has been a state function since 1890. There has been built up an excellent system of hospitals, with a patient population of nearly 55,000, maintained at a cost of about \$20,000,000 a year. Appearing frequently in old laws was the term "pauper insane," a term which now is replaced by "persons with mental disease." This well illustrates the change in public concept toward this problem. Supplementing the excellent system of hos-

TABLE 1.—Hospitals, Sanatoriums and Related Institutions in New York State *

| | Number | Beds, Rated Capacity | Average Patients | Registered Nurses for Nursing | Patients Admitted |
|----------------------|--------|----------------------------|---------------------|-------------------------------------|----------------------|
| Total..... | 603 | 132,420 | 126,794 | 9,881 | 1,052,722 |
| Public (total)..... | 161 | 104,836 | 93,410 | 3,687 | 269,345 |
| Tuberculosis.... | 37 | 6,093 | 5,629 | 455 | 8,420 |
| State..... | 43 | 73,898 | 66,764 | 877 | 31,987 |
| U. S. (federal)... | 23 | 6,782 | 4,760 | 371 | 27,939 |
| Other..... | 61 | 18,063 | 16,427 | 1,081 | 230,989 |
| Private (total)..... | 439 | 47,584 | 33,384 | 6,194 | 733,377 |
| Tuberculosis.... | 17 | 2,858 | 2,033 | 93 | 3,837 |
| Other..... | 422 | 45,226 | 31,331 | 6,101 | 749,540 |

* Compiled from list of registered hospitals in THE JOURNAL, March 25, 1933, pp. 945-950.

pitals are state-operated child guidance clinics and clinics for the after-care of paroled mental patients, which served more than 10,000 patients last year.

The control of tuberculosis furnishes another example of care and treatment as well as preventive services for patients supplied through public action. When the sanatorium construction program now under way is completed, a bed will be available for every tuberculous patient in need of such care. State and local sanatoriums now built or in process of construction provide a total capacity of 8,300 beds. Tuberculosis sanatoriums represent a capital investment of \$19,000,000 and an annual operating cost of \$3,553,000. Moreover, in every county of the state, diagnostic clinics and clinics for the follow-up care of discharged patients are being conducted. The state itself operates such clinics in the smaller counties which are unable to provide these services, while in the larger counties the service is available through the county tuberculosis sanatoriums.

State and local governments also have assumed a large measure of responsibility for medical care of children. In theory, and to a considerable extent in practice, educational authorities have accepted responsibility for the physical well being of all children of

school age. As a part of this program, an annual medical inspection is required, and "if the parents or guardians are unable or unwilling to provide the necessary relief and treatment for such pupils, such fact shall be reported by the principal or teacher to the medical inspector, whose duty it shall be to provide relief for such pupils."¹ The annual cost of school health services is \$2,537,184.

The state itself also has assumed much of the burden of care and treatment of crippled children. Under the provisions of the Education Law² and the Children's Court Act³ the state has declared its intention that no child shall be handicapped in acquiring an education or in engaging in a remunerative occupation by reason of correctable physical defect or disease. It is estimated that about 3,000 such handicapped children will be treated this year, requiring a total expenditure of more than a million dollars, one half of which will be paid by the state. This law is administered through joint actions by the departments of health and education, a large state reconstruction home, private orthopedic hospitals and homes, a field staff of orthopedic surgeons and nurses, and many local orthopedists and hospitals.

Counties and cities are authorized to construct and maintain public general hospitals⁴ at which all citizens are entitled to admission free or at a rate they are able to pay. There are thirty such hospitals now in operation in the state. In table 1 are given the detailed data concerning the number and size of public hospitals in various categories as compared with similar data for the private hospitals in the state.

The volume of dispensary service, in both public and private hospitals, has grown rapidly in recent years. In 1931 more than two and one-quarter million individuals were treated in clinics and dispensaries (public and private). Data for 1932 are incomplete but indicate a considerable increase over previous totals. Table 2 summarizes the volume of dispensary care and shows the large increase in the use of public facilities.

The control of the venereal diseases is another field in which public action in recent years has supplemented, and to some extent supplanted, private endeavor. Surveys of cases of venereal disease under treatment indicate that between 40 and 50 per cent of all cases of syphilis and a somewhat smaller percentage of gonorrhea cases are now being treated at public expense. In the venereal disease clinics upstate last year, 23,000 patients were given 230,000 treatments. Accurate data for New York City are lacking, but the cases more than double the upstate total. All these clinic treatments are included in the total given under dispensary service.

Traditionally, government has provided needed medical care for paupers and indigents, although such care rests on a statutory rather than a common law basis. A long step beyond this concept was recorded in New York by the passage in 1929 of a public welfare law, which makes it the obligation of municipalities to provide all necessary medical, nursing and hospital care for those citizens, normally self supporting, who are unable temporarily to provide themselves with such service. The state is divided into public welfare districts, one for each county and each large city. The law⁵ requires that

The public welfare district shall be responsible for providing necessary medical care for all persons under its care, and for

1. Section 573, Education Law.

2. Article 47.

3. Section 486.

4. General Municipal Law, sections 126-134.

5. Sections 83, 84 and 85, Public Welfare Law.

such persons otherwise able to maintain themselves, who are unable to secure necessary medical care . . . Such care may be given in dispensaries, hospitals, the person's home or other suitable place.

When a legislative body shall make an appropriation for the purpose, one or more physicians shall be appointed to care for sick persons in their homes. . . . Where no physician is so appointed, the public welfare official shall employ a physician or physicians to visit sick persons in their homes whenever necessary.

Further,

A public welfare district shall provide needed care for sick and disabled persons in a hospital. . . . It may contract with such . . . hospital to pay such sum for the care of sick persons as may be agreed upon.

It will be noted that this law definitely removes the stigma of pauperism from recipients of public medical relief. It is based on the theory that a person otherwise self supporting may be unable to provide medical treatment for himself and his family; that the lack of medical care may result in unnecessary illness with resulting

of New York, rules and regulations have been formulated and put into effect to provide uniform standards and procedures for medical relief.⁷ In some welfare districts, "outdoor medical relief"—the term includes home and office care—constitutes as high as from 15 to 20 per cent of the total relief load. For the state, exclusive of New York City, it constituted 3.2 per cent for April, 1933. While this percentage may seem small, it will amount to about a million dollars a year at the current rate of expenditure. All this money is being paid to local physicians on a fee basis for service rendered in accordance with rules laid down by the state. The physicians have been very generous in accepting lower rates of pay than those prevailing in private practice.

Desirable as it may seem for the practice of medicine to be exclusively a private matter between the physician and his patient, the payment to physicians from public funds during the last year probably has meant the difference between solvency and insolvency for a great many doctors, particularly in rural areas. It has meant

TABLE 2.—*Visits to Dispensaries in New York State**

| Dispensaries | 1931 | | 1932 Number of Individuals Treated | Per Cent Increase, 1932 Over 1931 | 1932 Total Number of Visits | Per Cent Increase, 1932 Over 1931 |
|--|-------------------------------------|-----------------|---|--|--------------------------------------|--|
| | Number of Individuals Treated | Total Visits | | | | |
| New York City | | | | | | |
| Public..... | 596,755 | 1,771,082 | 593,297 | 17.1 | 2,187,071 | 23.5 |
| Private..... | 1,199,833 | 4,340,326 | 1,202,969 | 0.3 | 4,468,706 | 2.7 |
| Total..... | 1,796,588 | 6,111,408 | 1,796,266 | 5.3 | 6,655,777 | 8.7 |
| Outside New York City | | | | | | |
| Public..... | 93,927 | 336,496 | 117,322 | 24.9 | 361,724 | 7.5 |
| Private..... | 128,657 | 514,421 | 140,097 | 15.9 | 610,646 | 18.7 |
| Total..... | 222,614 | 850,914 | 266,419 | 19.7 | 972,370 | 14.3 |
| New York State | | | | | | |
| Public..... | 690,682 | 2,107,575 | 710,619 | 18.3 | 2,548,795 | 20.9 |
| Private..... | 1,328,520 | 4,834,747 | 1,352,006 | 1.8 | 5,060,152 | 4.4 |
| Total..... | 1,929,202 | 6,942,322 | 2,062,625 | 6.9 | 7,608,947 | 9.4 |
| Estimated Totals on Basis of Preliminary Figures Above | | | | | | |
| Complete Report for 1931 | | | | | | |
| New York State | | | | | | |
| Public..... | 642,911 | 2,236,255 | 760,564 | 18.3 | 2,703,632 | 20.9 |
| Private..... | 1,641,937 | 6,266,064 | 1,671,512 | 1.8 | 6,541,771 | 4.4 |
| Total..... | 2,284,848 | 8,502,319 | 2,432,076 | 6.9 | 9,245,403 | 9.4 |

* A preliminary comparison of reports from certain clinics for 1932 as compared with reports from same clinics in 1931.

dependence and pauperism. In other words the law, in addition to requiring medical care for persons already indigent, seeks to prevent others from becoming public charges for lack of medical care.

A further example of the interest of the state, expressed in law, in the personal health of citizens is found in the Temporary Emergency Relief Act, passed in 1931.⁶ This law, the first of its kind in this country to meet the unemployment emergency, was based on the public health powers of the state. By its terms, medical care, food, clothing and shelter are listed as "necessities of life." The provision of such care is made an obligation on state and local agencies charged with unemployment relief. Under the terms of this law the state establishes relief standards and reimburses the local welfare districts for approved expenditures on account of unemployment relief, including medical relief. The state department of health has acted as the medical adviser to the Temporary Emergency Relief Administration.

In cooperation with and with the approval of a special committee of the Medical Society of the State

also that needed medical care has been furnished to persons who otherwise would not have received such care.

The current unemployment emergency has given an opportunity to provide nursing and dental care by utilizing nurses and dentists who themselves are in need of public assistance on a "work relief" basis. More than 200 nurses are being employed by the state department of health with relief funds allocated for the purpose, and assigned to work under the supervision of local health departments, visiting nurse associations or similar agencies. These nurses render bedside nursing care and public health nursing service, principally to families receiving public relief funds. About the same number of dentists similarly are being employed to provide dental service in existing and newly established dental clinics in New York City. The current annual rate of expenditure for these services is approximately \$250,000.

The volume of public medical relief under the Public Welfare Law and the unemployment relief act can be visualized by the fact that in April, 1933, 396,884

6. Laws of 1931, chapter 798; amended by Laws of 1932, chapter 567.

7. Health News, March 13, 1933 (10, No. 11).

families were on the relief rolls. This constitutes 15 per cent of the population of the state. Medical care for the unemployed, "state medicine," if you like, for a considerable part of the population has been superimposed on a volume of public medical service already large.

It should be explained that medical care under public welfare laws is provided in several ways:

(a) In New York City, medical relief is given in hospitals and dispensaries. Until last year that city had not provided "outdoor medical relief." Under an arrangement agreed on by the county medical societies of New York City, home medical care was provided on a fee basis for needy persons under regulations comparable to those in the rest of the state. At the present time about \$35,000 per month is being spent for this outdoor medical relief. This is supplemented by home nursing care, likewise paid for from relief funds, and by an annual appropriation of \$16,985,410 for the city department of hospitals.

(b) In the larger upstate cities, hospital and dispensary care is provided; also home medical care through salaried physicians employed for that purpose. Home nursing service also is furnished through visiting nurse associations, supplemented by emergency relief nurses.

(c) In the smaller cities and rural areas, local welfare officials in general have not employed physicians on a salary basis, although there are some notable exceptions to this rule. The more usual arrangement is for local physicians to be employed on a per visit basis, subject to the state regulations already outlined. Bedside nursing care in rural districts has not been developed extensively, although local welfare officials are authorized to and frequently do employ nurses to give such care to ill persons.

Time permits only casual mention also of such state or local public health activities as prenatal and infant welfare clinics; clinics for immunization of children against diphtheria and smallpox; communicable disease hospitals; the state institute for the study of malignant disease, with an extensive service in making free diagnoses of pathologic specimens for any physician or hospital and with a limited tumor diagnostic and treatment service; the state-wide system of approved or state-aided local laboratories, many of them tax supported and available free for clinical no less than public health examinations; and the free distribution by the state of biologic products to all citizens regardless of ability to pay.

Recent discussions of the need or lack of need for reorganizing our existing system of medical care frequently start from a mistaken assumption. The impression seems to prevail that a choice must be made between the present system of private and completely individualistic medical care and a very different collectivized system. As a matter of fact the present system is far from being completely individualistic. With two thirds of the hospital beds in New York State owned by the public and supported through taxes; with 15 per cent of the population of the state receiving all necessities of life from public funds, including medical care; with practically all cases of mental disease and a large proportion of tuberculosis being hospitalized at public expense; with one half of the burden of syphilis treatment a public responsibility; with the care of crippled children an actual obligation, and medical care of school children a legal obligation of the public; and with blanket authority existing for any city or county to

construct and operate public general hospitals available to all citizens, it will be seen that, to a considerable extent, medical care already has become a matter of public participation.

The only opinion I shall venture, as to the implication of trends in public medicine in New York in determining medical care to be provided in the future, is that the interest of the public in this problem, that action by municipalities under one or another provision of existing laws, that public expenditures and control for preventive and curative medicine seem as likely to increase in the future as in the past.

State Office Building.

ABSTRACT OF DISCUSSION

DR. W. H. ROSS, Brentwood, N. Y.: How far can the state go in activities hitherto largely dependent on private initiative for leadership? One can easily visualize increasing difficulty for the taxpayer if the state increases its public medical care. The state has no money except that which comes from the taxpayer. We as a nation cannot spend money indefinitely. Any increase in public medicine means an increase in paternalism. Is this for the best interests of society? The cost of work relief in New York State has increased from two and a half millions to more than one hundred millions in two years. We have accepted for a long time the obligation of providing food and shelter and clothing for every individual and now we have added to these medical care. If the number of individuals requiring these things grows, a redistribution of wealth will be necessary and a reorganization of that which was thought to be standard. I am not objecting to public medicine if we as taxpayers can pay the bill. Can all these things continue without bringing about taxpayers' bankruptcy? The state has become tremendously powerful. It has come to have vast resources. There is an alarming tendency to have the state do things and the result may be a disturbance of our social formation. We have today in government controls of all kinds—commerce, currency, industry. I doubt whether it can go much further without imposing an impossible burden on the taxpayer. If state intervention goes too far into the realm of private initiative, is there danger that it will absorb social effort which has hitherto been thought to be the most effective means for advancing public welfare? One wonders whether emotionalism is playing a part in public medicine. We need the assistance of the state in medicine but do we need the state as a dictator in medicine? The indications are plain of the trends in public medical care at the taxpayers' expense, but is it the best thing for society to have its personal initiative diminished by giving more than it can get for itself?

DR. NATHAN B. VAN ETTEV, New York: The housing of sufferers from mental diseases at an annual cost of \$20,000,000 presents a serious tax problem. The intensive effort in the prevention and care of venereal diseases, and clinical research in the field of personality, of endocrinology, of psychiatry, of social maladjustments and of eugenics, may open an opportunity profitable to the medical profession and to the taxpayer. Forty-two per cent of all hospital beds are now occupied by mentally sick people, many of whom might be caring for themselves if they had been able to profit by early diagnosis and preventive treatment. Control of tuberculosis in the last twenty-five years justifies the provision of sanatoriums. The governmental care of the health of school children through supervision of preventive immunizations promises dividends. The city hospital has long been the stage on which has been enacted a continuous performance, the title of which might well be "Demoralization." Yearly the plot thickens with an increasingly large cast. The city dispenses an unintelligent hospitality which defrauds the taxpayer. Physicians have always been willing to serve the sick poor without fee, and the city hospital always will be served by physicians without complaint, if the hospital is limited to the service of the really indigent. All classes of citizens, regardless of financial status, have been demoralized into thinking that usage has created a right to enjoy privileges for which they do not pay. Many people have crowded wards and clinics

who have never had a moral right to be there. Government hospitals are in unfair competition with private practitioners and in ruinous competition with nongovernmental hospitals and are defrauding the taxpayer. Last month a patient in our hospital on the day before his free operation made a will distributing an estate of \$100,000. Such abuses of medical charity are no doubt common everywhere and must be corrected.

TYPES OF CHRONIC RHEUMATISM

RALPH A. KINSELLA, M.D.

ST. LOUIS

A remarkable increase in interest in chronic rheumatism has been shown in recent years. As a matter of fact, a student in this field may find the review of important work of older writers and the descriptions of results of modern investigators within the current literature of the past two years.

The formation of the American Committee for the Control of Rheumatism might be regarded as a symptom of this increased interest. The classification of chronic rheumatism which was issued under the auspices of this committee proved to be a challenge which has been met in the studies of many workers and which has been useful in leading to a clearer statement of the problems that must be understood before treatment can be improved.

The multiplicity of names previously in vogue led the average practitioner to believe that as many different forms of rheumatic disease were prevalent as there were names employed by various writers. It is my purpose in this paper to look at the question from the standpoint of a practitioner and attempt to come to an attitude that will make designation simple and the understanding of problems involved more clear.

The American Committee on the Control of Rheumatism suggested that the various types of chronic rheumatism be grouped under two varieties called atrophic and hypertrophic arthritis. It became necessary at once to study the evidence that led earlier writers to employ different names. It is apparent that a single disease was receiving numerous designations, such as proliferative, atrophic or chronic infectious or rheumatoid arthritis. The expression "proliferative arthritis" was used in the classic description of Nichols and Richardson when they described the changes in the joints in the disease previously known as arthritis deformans. The reasons for using the expression "proliferative" were valid, and these investigators traced the progress of the reaction in a joint with remarkable clearness. The term had the disadvantage of being indefinite and not sufficiently exclusive in character. To these changes appeared to be of bone substance, and this gave rise to the expression "atrophic." The expression "atrophic arthritis" has become widespread in use because it is popular not only with the internist but also with the roentgenologist. It is objectionable because the chief pathologic process is not atrophy and the real process is entirely overlooked in such an expression. Within the past ten years there has been much bacteriologic study, the results of which implied that arthritis deformans was an infectious process, and many writers use the expression "chronic infectious" arthritis as synonymous with proliferative arthritis or

atrophic arthritis. The fact that many other forms of chronic infection about the joints produce clinical pictures strikingly different from the picture of arthritis deformans makes the expression "chronic infectious" arthritis too indefinite. In the meantime, the expression rheumatoid arthritis has continued from the writers of the earliest reports, and in many prominent clinics in the country the disease which has been variously referred to by the aforementioned names is classified as rheumatoid arthritis. The expression rheumatoid arthritis may be said to represent an escape from inaccuracy as much as an approach to better definition. It has the added advantage, however, of suggesting a connection with rheumatic fever, which is reflected not only in recent studies but even in very early reports.

For the purpose of classification, therefore, in this paper the expression rheumatoid arthritis will be used to describe that disease which the average practitioner of today learned about under the name arthritis deformans.

The other variety of chronic arthritis, which is common in everyday practice, was designated as hypertrophic in the report of the American Committee for the Control of Rheumatism. There is much evidence in favor of the accuracy of this term, because changes that take place in the bones of patients with this condition sometimes show evidence of hypertrophy. Here again the influence of the roentgenologist is felt because, while Nichols and Richardson described the changes found in this condition as essentially degenerative, the appearance under the x-rays were suggestive of hypertrophy and exostosis.

The recent studies of Keefer and his associates and those of Bauer would indicate that these degenerative changes are incidental to the effects of trauma and senescence, and to the wearing out of movable parts, and that the hypertrophic changes and exostoses represent attempts on the part of the tissue to repair damages produced by such trauma. A consideration that complicates this argument arises from the fact that Heberden's nodes, so frequent in degenerative arthritis, appear definitely to be associated with certain involutional changes, particularly those occurring in women at the time of the menopause. This creates the impression that some constitutional influence besides trauma is important in producing this type of rheumatism. The expression "osteo-arthritis" describes the clinical picture and is perhaps as popular as the expression "hypertrophic"; it is the term of choice in some clinics. There is not much reason to prefer any one of the three terms degenerative, hypertrophic or osteo-arthritis. For the purpose of description in this paper, the expression rheumatoid will apply to the first type of chronic rheumatism, and the expression degenerative arthritis will be used to designate the other type of chronic rheumatism. The expression "arthritis deformans" is discarded because it refers only to "rheumatism with deformity"—a condition which may exist in both of the chief varieties mentioned.

RHEUMATOID ARTHRITIS

It is not my purpose in this paper to describe again the clinical picture so well known by every practitioner. Extensive descriptions have already been written. Until comparatively recent times no theory concerning the etiology of rheumatoid arthritis gained much popularity. In their descriptions of the pathologic changes, Nichols and Richardson were careful to disclaim any knowledge of etiology and particularly held that there

was no evidence to support the idea that the streptococcus was responsible for the disease. During the past ten years the chief discussion concerning the etiology has centered about the streptococcus. On the one hand, there have been reports by Cecil, Nichols, Stainsby, Clawson and others of positive cultures of various types of streptococci recovered from blood and synovial fluid. On the other hand, very painstaking work by Dawson tends to refute the positive reports, and this negative attitude is strengthened by further studies of Lichtman and Gross. Besides the approach to the question of bacterial infection by means of cultures, studies of serologic features have been made which are both interesting and important.

Many workers agree that patients with rheumatoid arthritis possess a peculiar capacity on the part of their serum to agglutinate streptococci. Dawson, Olmstead and Boots found that this capacity to agglutinate was possessed in common by patients with rheumatoid arthritis and those with acute rheumatic fever. Keefer and his associates found that while a little over 50 per cent of patients with rheumatoid arthritis possessed the capacity to agglutinate hemolytic streptococcus, patients with rheumatic fever possessed this capacity in less than 25 per cent of the cases. Finally, Nichols and Stainsby, while agreeing that the majority of patients with rheumatoid arthritis displayed such capacity to agglutinate hemolytic streptococcus, found that patients with acute rheumatic fever as a rule did not possess such a reaction. A point of great interest lies in the fact that patients with rheumatoid arthritis, according to Dawson, yield positive agglutination reactions not only for *Streptococcus hemolyticus* but also for the *R. pneumococcus*.

It is not easy to interpret these results as meaning that rheumatoid arthritis is an infection by streptococcus. One is reminded of the Kahn test for syphilis, according to which patients with this infection show agglutination reaction with extract of beef heart. The streptococcus may be as remote to rheumatoid arthritis as beef heart is to syphilis. Nevertheless, the fact that patients with rheumatoid arthritis do show a strongly positive tendency to agglutinate hemolytic streptococci might be taken as an argument in favor of the infectious nature of the disease.

Pathologic changes about the joints in rheumatoid arthritis were first fully described by Nichols and Richardson and more recently descriptions in greater detail have been given by Allison and Ghormley. The pathogenesis of the disease as described by all of these workers places the initial lesion in the synovia, with a spread of the process into the joint cavity and into the interspaces of the ends of the bones. The process itself consists of round cell infiltration, which is characterized, according to Allison and Ghormley, by the formation of small tubercle-like collections. This picture is particularly interesting when considered in connection with the description of the subcutaneous nodules that are found in this disease and that are similarly described by Dawson, and in the older literature by McCrae. Both the lesions in the joints and in the nodules resemble the lesions of acute rheumatic fever.

It is perhaps interesting at this point to consider the pathogenesis of experimental streptococcal arthritis in rabbits. In this study, rabbits were inoculated intravenously with suitable doses of virulent hemolytic streptococci. At twenty-four hourly intervals the joint tissues were obtained at autopsy and investigated, to

determine the point at which initial inflammations might be beginning. It was found that at twenty-four hours initial lesions could be detected in the synovial membrane as a hemorrhagic collection, which quickly became purulent and extended into the joint at about the fifth day. An attack on the substance of the bone was made on the lateral aspect of the joint and a purulent infiltration was established which spread like a pannus over the joint surfaces and into the heads of the apposing bones. This infiltration became organized, and ankylosis was finally established by fibrosis.

This series of events is analogous to the pathogenesis as described by Nichols and Richardson and perhaps is additional support to the idea that the process in rheumatoid arthritis is an infectious one. The nature of the reaction in streptococcal arthritis, however, is so different from that of rheumatoid arthritis as to throw doubt on the conception that rheumatoid arthritis is related to infection by the hemolytic streptococcus. The occurrence of subcutaneous nodules both in acute rheumatic fever and in rheumatoid arthritis was noted by McCrae, and painstaking comparative study by Dawson has suggested that there is a striking resemblance between the microscopic evidence in the nodules in acute rheumatic fever and in rheumatoid arthritis. That there is a sharp clinical difference in the patterns of the two diseases is obvious, and the invariable attack on the heart seen in acute rheumatic fever is not encountered in rheumatoid arthritis. This point has been excellently emphasized by Master and Jaffe.

TREATMENT

As a result of the studies, which point to a possible connection between the hemolytic streptococcus and rheumatoid arthritis, numerous workers have employed the method of vaccination with these organisms in an effort to bring about successful treatment. The most noteworthy contribution in this field is the work of Clawson and Wetherby, who have treated many patients with chronic arthritis by intravenous injection of these bacteria. Unfortunately, these writers do not clearly separate cases of rheumatoid arthritis from other cases of chronic arthritis, and it is difficult accurately to criticize their results, because the prognosis in the two groups is so different.

In a much smaller experience at the arthritis clinic at Desloge Hospital in St. Louis, the use of streptococcus vaccines and streptococcus extracts has not been followed by encouraging improvement. Other forms of treatment include the use of hyperthermia, and other physical therapeutic devices have been used without more than temporary relief.

The operation of sympathectomy, while producing curious relief from pain in some instances, has not in our experience proved sufficiently valuable to justify its continued use. In this connection, it is very interesting to mention that many operations, such as the removal of an infected gallbladder, will produce not only a temporary benefit to the patient but even a vasomotor effect in the hands and feet similar to that seen after sympathectomy.

The clinical course of this disease presents one feature that is extremely important in estimating the effect of any treatment. This feature is the tendency of the patient to enjoy remissions. These remissions are much more likely to occur in the early months or years of the disease and may last from a few weeks to a few years. This fact makes it impossible to be certain that a given treatment is producing the remission which

might occur if no treatment were given. But, on the other hand, it constitutes an important reminder that improvement is possible could the key to its production be captured. In my experience, as in the experience of many others, the prognosis of rheumatoid arthritis is extremely discouraging. The need is great for searching for the etiologic agent in hitherto unexplored fields, and the treatment that any physician employs had better be some reasonable treatment worked out along new lines.

DEGENERATIVE ARTHRITIS

One of the reasons why the expression arthritis deformans is no longer used to describe rheumatoid arthritis lies in the fact that deformity is also produced by the disease known variously as degenerative, hypertrophic or osteo-arthritis. No two diseases could be more unlike than rheumatoid arthritis and degenerative arthritis. While there is an argument concerning the bacteriology of rheumatoid arthritis, it is apparently universally agreed that there is no bacteriology whatever in osteo-arthritis. The disease about the bones was well described by Nichols and Richardson. More recently, Keefer and his associates have undertaken to study the changes in the bones of a group of 100 knee joints of patients coming to necropsy as a result of a variety of diseases and without the symptoms of rheumatism in the knees in 90 per cent of the cases. They came to the conclusion that the process of aging and the trauma incident to motion and weight bearing produced primary degenerative changes in the joint surfaces which often led to stripping of the cartilage. They felt that the deformed excrescences were the result of an effort to repair damages locally. It is peculiar that persons who show these signs most readily are of a physical type in which small nodular swellings about the joints of the fingers occur frequently. These swellings have been called Heberden's nodes, and the question of their nature raised by Heberden himself has never been adequately answered. They do not occur about the joints of the toes and it is possible that they may represent a process in the fingers due to traumatic use similar to the process which has been described by Keefer and by Nichols and Richardson in other parts of the body. It is a question whether the changes about the bones just described deserve the name "arthritis." Such persons need not be patients. Whether or not they are patients apparently depends on the occurrence either of injury or of inflammatory changes about these previously degenerated joints. These inflammatory changes are most often the result of an infection and might be referred to as focal infection. The injury may be produced by new and sudden trauma or from the trauma incident to obesity. The experience of every clinician and clinic includes cases of this type in which, in one or several joints, painful swellings occur that have an apparent though often unproved relationship with a focus of infection elsewhere in the body. This is the field in which the idea of focal infection is well established. The treatment of such patients will depend on the nature of the exciting cause. In joints already the site of extensive excrescences and deformities provoked by years of trauma, slight injuries may produce effects calling for energetic orthopedic treatment. Such patients should be referred to the orthopedist and are most likely to be benefited by the various physical therapeutic measures as well as by orthopedic maneuvers. In that group of patients in which infection seems clearly to

play a rôle, careful search for infected foci must be made and appropriate clearing out of such places instituted. In connection with such infection, it must be remembered that syphilis may produce many kinds of inflamed joints in such patients. It is useful in many cases to employ colchicum in medication. An occasional patient having a low basal metabolic rate is benefited by the use of thyroid extract, but many patients experience an accentuation of pain following the use of this drug. In all patients with chronic arthritis, the restriction of carbohydrates seems beneficial. Many patients also report improvement when constipation is relieved either by ordinary remedies or by colonic lavage. Reduction in weight naturally lessens trauma in obese persons.

PROGNOSIS

The prognosis in degenerative arthritis is generally favorable. The nodes on the fingers are sometimes distressing and unsightly, and the symptoms of pain usually subside without special treatment. Patients who have evidence of acute infection of one or more joints usually suffer the most protracted course, but even in these patients limited improvement is to be expected. Long continued use of orthopedic and physical therapeutic measures may be needed, but here, too, success usually follows diligent effort.

When one considers the contrast that exists between the prognosis of degenerative arthritis and rheumatoid arthritis, it is apparent that the success of no treatment may be accurately estimated if this treatment is applied indiscriminately to the two types of disease.

SUMMARY

There are two main types of chronic rheumatism: the one known as rheumatoid arthritis, of apparently infectious nature, caused by some as yet undiscovered agent and without successful treatment at the present time; the other, known as degenerative arthritis, in which the factors of production are fairly well recognized and in which subsequent injury or superimposed focal infection constitute the reasons for bringing such persons under medical care. In this second disease, recovery is much more likely to occur.

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ABSTRACT OF DISCUSSION

DR. JAMES S. McLESTER, Birmingham, Ala.: Interest in chronic arthritis lies in the fact that the disease is widespread and that little is known about it. I have been impressed with the fact that many patients with roentgenologic evidence of hypertrophic arthritis will experience no discomfort whatever and that not until something happens, a minor accident or a passing infection, does pain appear. In addition to the tissue changes of wear and tear and of age, it would appear that some other factor is operative in such instances. Not so much rheumatoid arthritis is seen in the South as in the North. This is understandable if one accepts Dr. Kinsella's suggestion that this disease is perhaps in some way related to rheumatic fever, for in the South comparatively little of the joint manifestations of true rheumatism is seen. The admission of the author that he sees little promise in any of the present methods of treatment of arthritis strikes a responsive cord in most physicians. Dietary regulation, in my experience, has never seemed to influence the course of chronic arthritis, except in the case of the obese and the near obese. In the present state of knowledge of the treatment in chronic arthritis, the patient should be treated rather than the disease. Persistent, long continued attention to those things that add to the patient's comfort, including the various forms of physical therapy, will frequently bring genuine improvement.

DR. WALTER BAUER, Boston: In order to treat more intelligently each patient with chronic arthritis, the following requisites are fundamental: A simple classification must be employed. The term chronic rheumatism serves as a "blanket term" for all joint aches and pains, is too indefinite, and should not be used. Chronic rheumatism can be divided into definite types. Dr. Kinsella has chosen the terms rheumatoid arthritis and degenerative arthritis. The terms rheumatoid arthritis and degenerative arthritis convey visual pictures of two distinct diseases with characteristic symptoms, signs and pathologic changes. The characteristic pathologic changes of the rheumatoid and degenerative types of arthritis are fully described and adequately illustrated in the exhaustive monograph written by Richardson and Nichols in 1909. Every practitioner should read it. Many diseases may simulate chronic arthritis, particularly the rheumatoid type. First, there are the joint diseases due to known bacteriologic agents. The most important one in this group is gonorrheal arthritis, because it can mimic rheumatoid arthritis. Other diseases that should always be considered are traumatic arthritis and the various arthropathies, as well as certain constitutional diseases with joint manifestations such as hysteria, hemophilia, intermittent hydrarthrosis, anaphylactic reactions and gout. Acute gout is a disease frequently diagnosed incorrectly. At times myxedema, early acromegaly and pulmonary osteo-arthropathy are labeled chronic arthritis. There is no specific therapy for rheumatic arthritis. Therefore, every one treating these patients should study them carefully, correct all abnormalities, treat the patient as a whole and observe the effect on the course of the disease. Rheumatoid arthritis is characterized by remissions and relapses; therefore it is difficult to evaluate any therapy employed. No patient should be considered cured until he has been symptom free for five years. In the case of degenerative arthritis, the story is entirely different. Data that I have accumulated lead me to believe that this form of arthritis represents the wear and tear of life but can also be produced by repeated trauma to a joint or long continued and unusual use of an extremity. It does not necessarily bear any relation to arteriosclerosis.

DR. ARCHER O'REILLY, St. Louis: One of the lessons to be learned from the discussion is the fact that each patient must be given a careful study and a thorough examination. An attempt must be made to find the basic cause of the condition and to correct the metabolic faults that may exist. With proper living, proper diet and proper exercise, a great many patients can obtain an improvement. If rheumatism or arthritis is seen early, a good deal can be done toward correcting the condition. I am not sure whether syphilis plays any particular rôle in arthritis. Several years ago I studied a number of cases of syphilitic arthritis, and in a good many I found conditions that simulated the various types of rheumatoid arthritis. The roentgenograms were the same, the appearance of the joints was typical. Those patients under antisyphilitic treatment showed remarkable results. I think, however, that syphilis plays a part as a secondary infection or as a focal infection. I do believe that in all these cases syphilis should be looked for.

Diagnosis of Auricular Flutter.—Of singular interest is the striking abnormality of rhythm exhibited in electrocardiographic tracings in the group of cases known as auricular flutter. This peculiar rhythm is a finding strictly within the domain of electrocardiography, since the clinical signs exhibited by patients with such a condition are very difficult if not impossible of detection through any other means. The reason for diagnostic failure clinically in the majority of instances of auricular flutter are obvious to those who are at all familiar with the nature of this disturbance of rhythm. Both the ear and the palpating finger at the wrist are greeted by a perfectly regular sequence of contractions, except where there exists an inconstant degree of auriculoventricular block; in most of these the ventricular rate is only moderately accelerated. It is true that the tonal quality of the heart sounds is rather altered, but such finesse in clinical differentiation belongs to diagnostic skill and acumen of the highest order only. For all practical purposes, therefore, the recognition of auricular flutter at present rests strictly with the electrocardiogram.—Parsonnet, A. E., and Parent, Sol: *Arch. Int. Med.* 51:938 (June) 1933.

CURE OF TYPHOID CARRIERS

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Typhoid carrier control presents one of the most troublesome of public health administrative problems. It is easy to say that such carriers should not be allowed to handle food for the consumption of others, yet application of this principle is often difficult if food handling is the only livelihood that the individual has. Too close surveillance may accomplish nothing further than to drive the carrier under cover, only to reappear in connection with further cases. To the administrator, therefore, any means of dealing effectively with such a carrier is just as valuable a tool as is the epidemiologic procedure that brought his existence to light.

Subsidy of carriers, the offering of an official reward for good behavior and abstinence from food handling has been attempted in some states. At best it can hardly be held out as an ideal solution, since it must always fall short of the normal earning capacity of the individual. It is an expensive procedure which must be continued year after year and is not effective with the irresponsible or the insincere. The threat of incarceration of uncooperative carriers, while often effective, can ultimately create only ill feeling and drive some carrier to cover.

The ideal solution is, of course, cure of the carrier condition; yet like most ideals this is simpler to formulate than to achieve. The site of the infection is deep seated and inaccessible to external influences. If the fortunately infrequent urinary carrier is left out of consideration, it may safely be said that the focus is in most instances the gallbladder. Here is found, as pointed out by Mallory and Lawson,¹ a characteristic pathologic condition of the mucosa, evidencing a chronic inflammatory process. Drainage, the normal means of favoring the cure of any localized infection, is at best incomplete. The presence of stones, often roughened on their surfaces, causes a chronic irritation and may offer crypts for growth of the typhoid bacilli. The almost invariable occurrence of stones in the typhoid gallbladder has led some to the belief that the carrier condition resulted from the localization of the infection on previously existing stones. This theory that stones are prerequisite to the development of the gallbladder carrier condition does not harmonize readily with the fact that small children may become carriers. We have under our observation a boy of 9 who has been a fecal carrier since his typhoid infection at the age of 4. Although we acknowledge that the existence of stones may favor the development of the carrier condition, it is hard, in view of these cases, to accept the doctrine that they are an indispensable prerequisite. The possible relationship between a typhoid infection and the subsequent development of stones gains support from the often reported isolation of typhoid bacilli from the center of such stones. Yet in this matter also few would concede the existence of a constant etiologic factor.

The necessity of considering the biliary tract as a whole in any discussion of the typhoid gallbladder has

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1. Mallory, T. B., and Lawson, G. M., Jr.: *Am. J. Path.* 7:71 (Jan.) 1931.

been repeatedly emphasized. It must be remembered that in many instances the infection of the gallbladder has spread upward along the ramifications of the biliary ducts, so that one may be dealing with a very widespread infection. Unfortunately, it is not possible to determine in advance the extent to which the infection has extended out of the gallbladder. If a specimen of bile obtained by duodenal tube is shown to contain typhoid bacilli, one can feel reasonably assured that there is infection of the biliary tract, but one cannot determine the extent of spread outside the gallbladder.

In the hope of reaching all parts of the biliary tract and thus effecting a cure, a vast and impressive array of medical measures have been used, aimed variously at disinfection of the tract from above downward, the favoring of drainage or the production of individual resistance. Stertenbrink² recently reviewed the German literature on this subject, analyzing the results achieved by the use of more than a hundred different therapeutic agents, including laxatives, disinfectants, dyes, bile products, vaccines (specific and nonspecific), proprietary products, foreign proteins and even ultraviolet radiations. He concluded that the methods were uniformly lacking in success or even promise. Similar conclusions have been arrived at by all who have seriously undertaken to cure the typhoid carrier by purely medical means.

Surgical treatment through drainage or removal of the gallbladder was first suggested by Dehler³ as a result of the observation of Blumenthal⁴ that a previously unrecognized carrier condition disappeared in patients on whom he had operated for gallstones. Following these early articles, numerous reports have appeared of one or more carriers cured of their carrier condition through surgical means. Both Voss⁵ and Arnd⁶ have published comprehensive reviews of the early literature, concluding that removal of the gallbladder was superior to mere drainage. Unfortunately, many of the cases were so poorly controlled before and after operation that to draw definite conclusions from them was somewhat hazardous.

The Haalands⁷ in 1927 presented a series of fourteen cases in western Norway in which cure had been attempted by surgical means. Five of these were typhoid carriers, the remaining nine being infected with paratyphoid B. One of the patients had died of the operation, and two had not been cured of their carrier conditions. All but one of the patients had gallstones. In this one instance, however, the gallbladder was normal when examined after operation, and the carrier condition was still present seven years later. The remaining eleven patients were cured of their carrier condition, as shown by repeated negative specimens over a period of months, averaging about a year. Vogelsang and Haaland⁸ in 1931 bring this series up to date, reporting on twenty-five carriers, nineteen of whom were definitely cured through cholecystectomy.

Whipple⁹ has reported a series of fourteen cases of gallbladder removal to cure a typhoid carrier condition. In this series there were two deaths and two failures of cure. Unfortunately, six of the patients were operated on late in the convalescence from their typhoid infec-

tions, so that there might be some room for doubt as to whether or not they would have continued as carriers even without surgery. We have ourselves found that a patient shedding the organisms eleven months after the infection could clear up spontaneously, as attested by twelve negative stool cultures at monthly intervals seven years later, followed by two negative diarrheal specimens and finally a negative bile specimen. Such an instance will explain why in Massachusetts we have preferred to classify as permanent carriers only those still shedding the organisms a year after infection. Until that time they are considered convalescent carriers.¹⁰

During the past few years, in the course of our routine supervision of typhoid carriers we have had occasion to follow carefully a series of twelve such permanent carriers who have submitted to removal of the gallbladder.¹¹ Nine of these were operated on at our suggestion in order to be cured of their carrier condition. The other three came to operation primarily because of the clinical condition of the gallbladder. The series is small, yet it has been followed with sufficient care so that we may draw a few deductions from it:

CASE 1.—M. J., aged 50, a housewife, had typhoid nine years previously, discovered through infection of a friend five years later. Cholecystectomy was performed for relief of gallstone colic, the attending surgeon being uninformed of her carrier condition. Stones were found at the operation. During the subsequent seven years she submitted fourteen stool specimens, all of which were negative for *B. typhosus*. Two bile specimens obtained by duodenal tube four and seven years after operation were likewise negative.

CASE 2.—J. M., a man, aged 48, had typhoid four years prior. He was employed as a milker, causing an outbreak of fifty-one cases. The gallbladder was removed to cure the carrier condition. The preoperative bile specimen was positive. Two stones were removed with the gallbladder. One positive stool specimen was obtained twenty days after operation, followed by twenty-four negative specimens (two diarrheal) during the succeeding year. The bile specimen at the end of a year was negative.

CASE 3.—D. T., a practical nurse, aged 50, had typhoid four months prior, convalescence being extremely slow. The gallbladder was removed for cure of a persistent carrier condition. Two preoperative bile specimens were positive; bile from the gallbladder at operation was positive; one bile specimen in the hospital two weeks after the operation was negative. During the next seven months seven stool specimens were submitted, all of which were negative for *B. typhosus*. The patient was lost from further observation.

CASE 4.—W. R., a man, aged 48, had typhoid twelve years prior, discovered through investigation of a milk-borne outbreak of twenty-three cases and one death. He was the milker. The gallbladder was removed to cure the carrier condition. A preoperative bile specimen was positive for typhoid; bile also was positive at the operation. Multiple stones were found. During the next eighteen months, nineteen stool specimens (one following artificially induced diarrhea) and one bile specimen fourteen months after the operation were examined, all of which were found free from typhoid organisms.

10. Since the original preparation of this paper, two more excellent studies of surgical cure of carriers have been reported. Sentfner and Coughlin (*Am. J. Hyg.* 17: 711, 1933) report cure of thirty-five of fifty-three carriers through removal of the gallbladder. There were eight deaths in the series and ten not cured. Eight others had not submitted sufficient specimens to determine cure. All the deaths had occurred among persons over the age of 50. Swenson (*Tidsskr. f. d. norske lægefor.* 53: 63, 1933) reports on gallbladder removal from fourteen carriers, eleven of whom were infected with paratyphoid. In this series there were three deaths among elderly patients who had insisted on operation, one patient had been operated on too recently to determine cure, and nine of the remaining ten had been definitely cured.

11. Since the preparation of this paper, another carrier has submitted to removal of the gallbladder owing to cholelithiasis. Three negative stool specimens during a five months period since operation have been obtained.

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3. Jchnschr. 54: 779, 2134, 1907.
4. med. Wehnschr. 51: 1641, 1904.
5. Voss, J. A.: *Acta med. scandinav.*, supp. 7: 360, 1924.
6. Arnd, I.: *Schweiz. med. Wehnschr.* 53: 423 (April 26) 1923.
7. Haaland, Margit, and Haaland, Magnus: *Lancet* 2: 1172 (Dec. 3) 1927.
8. Vogelsang, T. M., and Haaland, M.: *Norsk mag. f. lgevidensk.* 92: 1183, 1931.
9. Whipple, A. O.: *Ann. Surg.* 90: 631 (Oct.) 1929.

CASE 5.—R. L., aged 51, a housewife, stated that she had not had typhoid. Twelve days after an operation for cholelithiasis, stool culture was positive for typhoid organisms. Thirteen subsequent specimens during the next four years were negative. A bile tube was not passed because of chronic glaucoma, which had become acute at the time of the operation.

CASE 6.—M. T., aged 68, a farmer, had typhoid thirty years prior. Only one case of typhoid was definitely traced to him. He had, however, been selling home-made butter for several years in a small city where numerous cases of typhoid had occurred. These cases stopped suddenly after he discontinued selling it. He submitted to cholecystectomy for cure of the carrier condition. Bile specimens obtained preoperatively by duodenal tube, and directly from the gallbladder at the time of the operation, were positive for typhoid. Stones were found in the gallbladder at the time it was removed. Eight consecutive daily stool specimens during convalescence were negative, and thirteen specimens (one diarrheal) during the next sixteen months were also negative. A bile specimen thirteen months after operation was negative.

CASE 7.—I. S., a woman, aged 54, had typhoid thirteen years prior. She was a housewife on a milk farm and caused seven recognized cases. During three years following her recognition as a carrier, she submitted nine fecal specimens, all of which were positive for typhoid bacilli. The gallbladder was removed for cure of the carrier condition; one large stone was found. A specimen of bile taken at the operation was positive for typhoid. *B. typhosus* also was isolated from the gallstone. During the year following the operation, twenty-seven stool specimens (one diarrheal) were found to be negative for typhoid. A bile specimen one year after operation also was negative.

CASE 8.—W. D., aged 53, a business man, had typhoid fifteen years prior, discovered through infection of his son. The gallbladder was removed for relief of cholelithiasis. No bile specimens were obtained. Five stool specimens during the next year were all negative for typhoid. No further specimens were obtainable.

CASE 9.—A. W., aged 50, a housewife, had typhoid five years prior. She infected two family contacts. Six stool specimens over the five year period were all positive for typhoid. She submitted to operation for cure of the condition. No pre-operative bile specimen was taken, but a culture of the mucosa yielded *B. typhosus*. Four stones were found. A stool specimen eight days after the operation was positive. During the next four months, eight specimens submitted for examination were all negative. One positive specimen was then obtained. Seventeen specimens (the last two diarrheal) submitted during the next three years were consistently negative. A bile specimen three and a half years after the operation was found free of *B. typhosus*.

CASE 10.—J. D., aged 36, a housewife, had typhoid three years prior. She infected one family contact. The gallbladder was removed for cure of the carrier condition. Five stones were found. Preoperative and operative bile specimens were both positive for typhoid. The stools were positive for the first five days after operation, the first negative stool being obtained on the tenth day. Five subsequent stools in the hospital were negative and one bile specimen was negative, sixteen days after the operation. During the next three years, ten stool specimens were examined with negative results. She died following an operation for ovarian tumor three years after removal of the gallbladder.

CASE 11.—C. B., aged 30, a salesman, was found to be a carrier through routine examination of specimens during convalescence. Five years after his infection, the gallbladder was removed for cure of the carrier condition. Stones were found. A bile specimen obtained by duodenal tube prior to the operation was positive for typhoid. Twelve specimens during the next twenty months were negative for typhoid. In addition, weekly specimens submitted to the Harvard School of Public Health for five months after operation were uniformly negative. The patient has not yet consented to a second passage of the duodenal tube for a final bile specimen.

CASE 12.—R. H., a man, aged 29, an undertaker, had typhoid thirteen years prior. He infected two family contacts. The gallbladder was removed for cure of the carrier condition. Preoperative and operative bile specimens were positive for typhoid. Ten stool specimens obtained in the hospital between the sixth and the fifteenth day after operation were negative. During the sixteen months following discharge from the hospital, fourteen stool specimens (two diarrheal) were examined with negative results. A bile specimen sixteen months after operation also was negative.

With a single exception, the dates of infection ranged from four to thirty years prior to operation. In all but four instances, positive bile cultures had been obtained prior to operation, so that there was definite evidence that the infection was located either in the gallbladder or in the biliary ducts. In this way it was possible to avoid bringing to operation the carrier whose focus was elsewhere than in the biliary tract and whose condition could obviously not be affected by such surgery. Three of the patients who did not have preliminary bile cultures were operated on purely for relief of gallbladder symptoms, one of them not being recognized as a carrier at the time of the operation. Nine of the series submitted to operation primarily to cure their carrier condition, having had no symptoms serious enough to lead them to seek medical relief. They had, however, without exception had symptoms such as epigastric distress that may well have been associated with the pathologic condition of the gallbladder revealed at operation. These symptoms disappeared after operation. In all instances, stones were found. All of the patients recovered.

These twelve patients have been followed over variable lengths of time and examination of specimens from them has been consistently negative, as shown in the table. One alone, patient 9, showed a single positive specimen taken four months after operation, but this has been followed by a series of fifteen negative specimens (some diarrheal) over a period of two years. Two of the patients had negative bile cultures before leaving the hospital and seven others have had negative bile cultures taken at least one year after operation. These seven have been taken from our carrier list and have been given letters stating that in our opinion they are no longer typhoid carriers. The others having refused to have a specimen of bile taken by duodenal tube continue nominally on our list, though we have reason for believing that they are actually cured. In all instances the operation performed was removal of the gallbladder.

As this series of cases has developed, it has been possible for us to draw up standards by which we might determine the advisability of operation and judge as to cure. It has been mentioned that no person is considered a permanent carrier unless still shedding the organisms a year after the infection. We have then felt that in urging operation we were safe in predicting that the condition would not clear up without surgical intervention. It is insisted that the patient shall be a good surgical risk and not over 60 years of age. The stormy convalescence of the only carrier over 60 in the list prompted the adoption of this condition. Finally, it has been insisted that a bile culture shall have shown typhoid organisms. Through insistence on this condition it has been hoped to avoid those cases of carriers who would certainly not be benefited by cholecystectomy. If these conditions have been met we have felt that we could urge operation and in some instances defray the attendant costs. Five of the operations have

been paid for by the state. In such instances the patient has been allowed to select the surgeon and the hospital, the state paying the costs not to exceed \$250. When no preference has been expressed, the operation has been performed at the Massachusetts General Hospital.

The criteria for release of the carrier from further observation after operation have been purposely strict. We have insisted on the submission of at least twelve stool cultures, taken at intervals of not less than one month from each other. If these have all been negative, a bile culture has been obtained by a representative of the department. If this and two artificially induced diarrheal specimens are also negative, we have considered the carrier cured and have ceased further supervision.

It may be considered that we have been extremely fortunate that all of our carriers have been apparently cured and that we have not encountered instances of

sources of trouble were simultaneously effected under the most favorable conditions for the individual patient. The risk attending the operation under such circumstances is materially less than in those whose symptoms force them to seek relief through surgery.

Finally, it is interesting to consider briefly the purely administrative aspects of such a procedure. Are we justified in paying public moneys for the surgical treatment of those carriers who are willing to submit to operation? The relative cost of possible cure through operation as compared with subsidy is, in our opinion, more than ample justification for the payment of the operative and hospital fees. In one state the subsidy paid carriers varies from \$14 to \$65 a month, averaging almost \$30. This means an expenditure of about \$350 a year for each carrier so subsidized, and this expenditure continues in all probability the remainder of the carrier's life. For a sum materially smaller than a single year's subsidy we have found it possible to

Gallbladder Operations on Typhoid Carriers in Massachusetts

| Patient | Sex | Age | Years Since Typhoid | Preoperative Bile Culture | Stones Found | Fees After Operation | | | Bile | | |
|-----------|-----|-----|---------------------|---------------------------|--------------|----------------------|---------|----------------------|---------------------------------|--------------------------|-------------|
| | | | | | | Positive | Time | Negative in Hospital | Negative After Leaving Hospital | Interval After Operation | In Hospital |
| 1. M. J. | ♀ | 50 | 9 | ..... | Yes | 0 | ..... | 2 | 12 | 7 yrs. | ..... |
| 2. J. M. | ♂ | 48 | 4 | Positive | Yes | 1 | 20 days | .. | 24 | 1 yr. | ..... |
| 3. D. T. | ♀ | 50 | 1½ | Positive(2) | Yes | 0 | ..... | .. | 7 | 7 mos. | Negative |
| 4. W. R. | ♂ | 48 | 12 | Positive | Yes | 0 | ..... | 2 | 15 | 18 mos. | ..... |
| 5. R. L. | ♀ | 51 | ? | ..... | Yes | 1 | 12 days | 2 | 11 | 4 yrs. | ..... |
| 6. M. T. | ♂ | 68 | 30 | Positive | Yes | 0 | ..... | 5 | 23 | 16 mos. | ..... |
| 7. I. S. | ♀ | 54 | 13 | Positive(op) | Yes | 1 | 2 days | .. | 27 | 1 yr. | ..... |
| 8. W. D. | ♂ | 53 | 15 | ..... | Yes | 0 | ..... | .. | 3 | 1 yr. | ..... |
| 9. A. W. | ♀ | 50 | 5 | Positive(op) | Yes | 2 | 8 days | 3 | 22 | 3½ yrs. | ..... |
| | | | | | | 1 | 4 mos. | | | | |
| 10. J. D. | ♀ | 30 | 3 | Positive | Yes | 3 | 5 days | 5 | 10 | 3 yrs. | Negative |
| 11. C. H. | ♂ | 30 | 5 | Positive | Yes | .. | ..... | .. | 12 | 21 mos. | ..... |
| 12. R. H. | ♂ | 29 | 13 | Positive | Yes | 0 | ..... | 10 | 14 | 16 mos. | Negative |

infection high up in the biliary ducts that has persisted. Yet the fact that five of the cases showed one or more positive cultures during the convalescence from operation suggests that cases of biliary duct infection were included in the series. Lyon¹² has recently advised prolonged biliary drainage in the treatment of cases that do not clear up after operation. It is because of their existence, our inability to make certain that the stool specimen submitted actually came from the carrier, and the possibility of missing carriers through sole reliance on stool cultures, as pointed out by Garbat,¹³ that we have insisted on the bile culture before release from supervision.

The histories of these carriers suggest that although in most instances the hope of curing the carrier condition was the determining factor in the decision of the individual to submit to surgery, the operation was in the last analysis of considerable benefit to the patient's well being. All had had symptoms suggestive of a pathologic condition of the gallbladder, and all were relieved of their symptoms. The stones that were found in all instances were certainly of no value to the patient and might well have precipitated more serious gallbladder conditions at a later date. The cure of the carrier condition and also the removal of potential

offer a procedure which carries with it a very high proportion of cures and which, if used selectively, is reasonably safe. In addition, it has been shown to be of actual benefit for the individual most vitally concerned, the carrier himself. Furthermore, the carrier so cured is obviously no further a public health menace. The subsidized carrier, on the other hand, may well continue to spread the infection. In one state which has relied on subsidy, twenty-one cases of typhoid, three of which were fatal, were traced in a single year to seven previously recognized carriers. Certainly it is preferable to cure a carrier when possible than to pay for good behavior, which is often not maintained.

The conclusions are the same if one considers the purely theoretical cost of operation on carriers as a group. We do not know exactly how many carriers there are in Massachusetts today. We know of but seventy-five. So far as possible we attempt to recognize through release cultures all of those who become carriers following current infections. Our records show that, of those cases of typhoid followed up through specimens submitted to our own laboratory, about 2 per cent continue as permanent carriers. This figure is somewhat lower than that frequently recorded in the literature, often as high as 5 per cent. Part of the discrepancy, we feel, is due to the fact, already emphasized, that the line between the convalescent and the permanent carrier is drawn at one year. Were our

12. Lyon, B. B. V.: Typhoid Hepatocholeangitis, *J. A. M. A.* 98: 885 (March 12) 1932.

13. Garbat, A. L.: Rockefeller Inst. monograph 16, 1922.

line drawn at three months, as is frequently the case, the percentage of carriers recorded would be much greater.

It has also been our experience that, contrary to the general impression derived from the literature, women do not necessarily outnumber men as carriers. Although we have a preponderance of women on our carrier list, this is largely because they handle food more frequently and are therefore more frequently discovered in connection with outbreaks. On the other hand, we have more men than women who have been shown to be carriers on the basis of release cultures taken during convalescence.

If, then, we use our own low figure of 2 per cent of the survivors remaining as permanent carriers, take the average age of our typhoid patients, which has been 22 years, and assume the average expectation of life at that age has been 40 years, we may estimate that there are in Massachusetts today about 1,100 carriers. Were we able to find all these and persuade them to submit to operation at our expense, the cost would be \$275,000. If it is assumed that the cost of a single case of typhoid is \$500 (certainly a conservative estimate when loss of wages is included), it can be calculated that, with 250 cases in Massachusetts in 1931, the typhoid bill was \$125,000. This takes no consideration of the loss of life or mental anguish. Even on this conservative estimate, it is apparent that cure of the carrier condition through operation is far less expensive than the continuance of typhoid at even a minimal rate. The cost of treatment of all the carriers would be more than saved in three years. None of the commonly accepted public health procedures yield so high a return.

Such an event is, of course, purely utopian. Discovery of typhoid carriers is becoming increasingly difficult as the cases become fewer and more sporadic in character. A single case unrelated to others presents few promising leads. Most of the carriers that are found can be sufficiently well controlled to prevent further infections and are not interested in the removal of the gallbladder. Yet in those special instances in which continued wage earning is dependent on ability to engage in food handling, or in which the individual is extremely anxious to be cured of the condition and released from supervision, surgery presents a method which in our experience has been effective, safe and for the personal benefit of the patient.

SUMMARY

1. Medical measures for the cure of typhoid carriers have not been effective.

2. In a series of twelve cases, cure of the carrier condition has apparently been effected through removal of the gallbladder.

3. In all of these instances, stones were found and the symptoms associated with the gallbladder were cured.

4. Prior to operation the bile should be shown to contain typhoid bacilli, as it is important to make certain that the infection is located in the biliary tract.

5. All carriers whose gallbladders are so removed should be followed after operation for at least a year by monthly examinations of specimens and not definitely released until a negative bile culture has been obtained.

6. The payment of cost of operation is a justifiable public health expenditure, which is cheaper and more effective than subsidy.

METHEMOGLOBINEMIA FOLLOWING THE ADMINISTRATION OF BIS- MUTH SUBNITRATE

REPORT OF A FATAL CASE

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The literature of a quarter of a century ago contains many reports emphasizing the hazard of nitrite poisoning, or methemoglobin formation, following the oral administration of large doses of bismuth subnitrate used either in the treatment of diarrheas or for roentgenologic studies. That these warnings still bear emphasis is evident from some of the statements in modern textbooks.

Six consecutive pediatric textbooks were consulted on the treatment of summer diarrhea. Without exception, every one recommended the use of bismuth salts without pointing out the possible dangers of poisoning following the oral administration of large doses of bismuth subnitrate. In one of these books appears the statement that "bismuth subnitrate in not less than 10 grain doses at two hour intervals has given most satisfactory results and in order to be of service it must produce black stools." No warning is given of the danger of nitrite poisoning.

These observations have prompted the following report of a fatal case:

REPORT OF CASE

History.—A male infant, aged 1 month, was admitted to the hospital, July 14, 1932, because of a severe diarrhea of three days' duration. The stools were frequent, watery, and green but contained no visible blood or pus. Fever had been present for two days. Following this, the baby vomited on two occasions and had a convulsion that lasted an hour.

The infant was of normal gestation; the mother had been delivered by cesarean section. Neither cyanosis nor convulsions were present at birth.

On admission, the patient was small, dehydrated and emaciated and appeared to be acutely ill. The temperature was 99.8 F. A heat rash was present over a large part of the body, including the buttocks and the external genitalia. No cyanosis was noted. The head was well formed and a tense fontanel was present. The pupils were equal and regular and reacted to light. Nothing abnormal was found in the nose, mouth, pharynx, ears, neck or lungs. A faint systolic murmur was heard over the base of the heart. The liver was about 1 cm. below the right costal margin. The lymph glands of the cervical and inguinal regions were moderately enlarged. A diagnosis of intestinal intoxication was made. Five days later, the temperature rose to 102 F. Following a bilateral paracentesis, pus was obtained from both ears, and the temperature returned to normal.

After twelve days of dietetic therapy, no improvement in the diarrhea having occurred, 10 grains (0.65 Gm.) of bismuth subnitrate was ordered "every two hours until the stools were black."

July 27, the day after the bismuth subnitrate was started, the temperature was 99 F. and the nurse noted at 9 a. m. that the baby was very cyanotic and that the extremities were cold.

July 28, the temperature was 107.6 F. The cyanosis persisted with only slight fluctuations in degree. The respirations were labored and the patient was put in an oxygen tent. Bismuth subnitrate was discontinued after 190 grains (13 Gm.) had been given within forty-four hours.

July 29, the respirations were slow, shallow and gasping. The cyanosis continued to be marked in spite of the continuous use of the oxygen tent. External heat was applied because

the body was cold. The nurse noted that "the thermometer did not register." At 10:15 a. m., sixty hours after the first dose of bismuth subnitrate was given, the infant died.

Laboratory Examination.—The Mantoux test (1:10,000) gave a negative reaction. Albumin was found only once in the urine; acetone was present at each examination. Microscopic analyses were repeatedly negative. The blood on admission was reported as having a hemoglobin of 110 per cent; red blood cells, 4,570,000; white blood cells, 8,800; polymorphonuclears, 78 per cent, and lymphocytes, 22 per cent. No gross blood or pus was seen in the stools at any time. The benzidine test, however, always gave a positive reaction for blood. Stool cultures yielded only a growth of the colon bacilli.

Necropsy.—The body showed a poor state of nutrition and development. The skin was very gray and cyanotic in appearance. This was true, also, of all the viscera. The blood was a dark chocolate brown, typical of methemoglobin, and spectroscopically it gave a very positive reaction for methemoglobin.

The brain was grossly normal but microscopic sections revealed a recent small superficial hemorrhage into the cortex of the cerebrum, with a moderate infiltration of lymphocytes. The right middle ear contained a small amount of thick yellow pus. Both lungs showed only a very small area of hypostatic bronchopneumonia. The bowels were moderately distended with gas. A very small quantity of green, watery, fecal material was found in the large bowel, but no blood or pus was seen, and no inflammation or ulcerations were present. Peyer's patches and the solitary lymph nodules were not hypertrophied. A few mesenteric lymph glands were moderately enlarged. The remainder of the examination revealed nothing of interest. The postmortem blood culture showed no growth after five days' incubation. A growth of *Streptococcus viridans* and *Staphylococcus aureus* was obtained from cultures of the lung tissue.

The first report of methemoglobinemia caused by the ingestion of bismuth subnitrate for roentgenologic diagnosis was published in 1906 by Bennecke and Hoffman.¹ It occurred in a 3 weeks old infant with an enteritis. Three grams of bismuth subnitrate was given by gavage in 300 cc. of buttermilk. Twelve hours later the child became markedly cyanotic and collapsed; death occurred three hours later, and methemoglobinemia was present.

Boehme,² in 1907, reported a similar case in a child, aged 18 months. A few grams of bismuth subnitrate was given by stomach for roentgenographic purposes; two days later a few grams was injected into the rectum for the same purpose and washed out. Three hours later, the child was suddenly seized with pain, cried out, became cyanotic, and died in from twenty to thirty minutes. At autopsy, methemoglobin was found in the blood.

Stieglitz,³ in 1927, cited three instances of nitrite poisoning following the oral administration of bismuth subnitrate to patients suffering from severe diarrheas. He⁴ states that complete data were not available on these individuals. One of them was an elderly woman suffering from carcinoma of the rectum who had marked methemoglobinemia. The dosage of bismuth subnitrate which she had received was not known. She died shortly afterward. No further information is available on the other two cases.

COMMENT

In the case reported here, since only four hours elapsed between death and the time of autopsy and

since the infant was markedly cyanotic before death and not prior to the administration of bismuth, it seems safe to assume that the methemoglobin formation did not occur after death. Such postmortem changes⁵ have been reported to have occurred in the blood of the body many hours after death.

While the intestinal intoxication, otitis media, and terminal hypostatic bronchopneumonia may all have been contributing factors in the fatal outcome, the methemoglobin formation was apparently the determining factor. This is supported by the fact that the infant became cyanotic without evident pulmonary involvement within twelve hours after the subnitrate was started, became progressively worse in spite of the administration of oxygen, and died within sixty hours after the first dose of the drug was given.

The death was apparently due to asphyxia because of the methemoglobin formation. Support of this statement lies in the fact that ingested nitrates are supposedly reduced to nitrites by the putrefactive bacteria of the intestine.⁶ The nitrites are absorbed by the blood and in some way oxidize hemoglobin to methemoglobin.⁷ If the individual is not overwhelmed with the intoxication, the body tissue may again reduce the pigment to normal hemoglobin.⁸ If, however, a fatal dose of the drug is given, most of the oxygen of the blood will be bound firmly in the methemoglobin. This bond is so firm that the oxygen cannot be liberated for tissue respiration, and asphyxia follows.⁹

These affirmations are further partially substantiated by the following experimental work: Haldane, Makgill and Mavrogordato¹⁰ gave rabbits sublethal doses of nitrites. In a typical instance, over half of the blood pigment had become methemoglobin in one hour and the rabbit showed signs of anoxemia. After three and one-half hours, the methemoglobin was reduced to 6 per cent and the rabbit appeared normal. Lewin and Dennig¹¹ reported similar observations.

ZoBell and Meyer¹² demonstrated that about 425 *Brucella* organisms commonly found in the intestinal tract reduce nitrates to nitric acid when grown in vitro. The same reaction may possibly take place in the bowel of a living animal.

Van den Bergh¹³ demonstrated that nitrites could form in the bowel from nitrates and subsequently be absorbed through injured intestinal walls and recovered in the blood. The nitrites are eliminated by the kidneys, and if the rate of production is greater than that of elimination, methemoglobinemia may result.⁹

Not only ingested bismuth subnitrate but also other ingested nitrates and nitrites have been reported to have produced methemoglobinemia. Eusterman, Keith and others have cited cases of methemoglobin forma-

5. Wells, H. G.: *Chemical Pathology*, ed. 5, Philadelphia, W. B. Saunders Company, 1925, pp. 537-539.

6. Beck, E. G.: *Toxic Effects of Bismuth Subnitrate*, Tr. Chicago Path. Soc. 7: 179, 1906-1909.

7. Gibson, G. A., and Douglas, C. C.: *Microbic Cyanosis*, *Lancet* 2: 72 (July 14) 1906. Levy, Milton: *The Preparation and Some Properties of the Crystalline Methemoglobin of the Horse*, *J. Biol. Chem.* 89: 173 (Nov.) 1930.

8. Neill, J. M.: *Studies of Oxidation-Reduction of Hemoglobin and Methemoglobin*, *J. Exper. Med.* 41: 299 (Feb.) 1925.

9. Howell, W. H.: *Textbook of Physiology*, ed. 8, Philadelphia, W. B. Saunders Company, 1922, p. 43.

10. Haldane, J., Makgill, R. H., and Mavrogordato, A. E.: *Injection of Sublethal Doses of Bismuth Subnitrate in Rabbits*, *J. Physiol.*, 1897, cited by Neill.⁸

11. Lewin and Dennig: *Injection of Sublethal Doses of Bismuth Subnitrate in Rabbits*, cited by Neill.⁸

12. ZoBell, C. E., and Meyer, K. F.: *Factors Influencing the Reduction of Nitrates and Nitrites by Bacteria in Semisolid Media*, *J. Bact.* 24: 273 (Oct.) 1932; *Reduction of Nitrates and Nitrites by Representatives of the Brucella Group*, *Proc. Soc. Exper. Biol. & Med.* 29: 116 (Nov.) 1931.

13. van den Bergh, A. A. H.: *Enterogene Cyanose*, *Deutsches Arch. f. klin. Med.* 83: 86, 1905.

1. Bennecke and Hoffman: *First Fatal Case of Bismuth Subnitrate Poisoning Reported in the Literature*, *München. med. Wehnschr.*, 1906, cited by Beck, E. G.: *Toxic Effects from Bismuth Subnitrate*, *J. A. M. A.* 52: 14 (Jan.) 1909.

2. Boehme: *Report of Fatal Case of Bismuth Subnitrate Poisoning*, *Arch. f. Exper. Path. u. Pharmacol.*, 1907, cited by Beck, E. G.: *Toxic Effects from Bismuth Subnitrate*, *J. A. M. A.* 52: 14 (Jan.) 1909.

3. Stieglitz, E. J.: *Bismuth Subnitrate in Therapy of Hypertension*, *J. Pharmacol. & Exper. Therap.* 32: 23 (Nov.) 1927.

4. Stieglitz, E. J.: *Personal communication to the author.*

tion following the use of ammonium nitrate as a diuretic.¹⁴

In addition to the nitrates and nitrites, many other drugs, such as nitrobenzene,¹⁵ potassium chlorate⁵ found in certain tooth pastes and mouth washes, acetylsalicylic acid¹⁶ and acetphenetidin¹⁷ used over long periods of time as headache powders may produce methemoglobinemia.

The metabolic activities of pneumococci¹⁸ and Streptococcus viridans,¹⁹ as well as the toxins of the pneumococci,²⁰ have been shown capable of producing methemoglobinemia when placed in contact with red blood cells.

In "enterogenous cyanosis,"²¹ a condition due to inflammation of the bowel and associated constipation, methemoglobin formation is not uncommon. It occurs apparently without the presence of nitrates or nitrites, and the putrefactive bacteria^{21a} of the bowel are thought to be the responsible agents.

Since most individuals can tolerate huge doses of nitrates without cyanosis¹⁴ and since methemoglobinemia is most likely to occur in patients who have intestinal putrefaction, nitrite poisoning and methemoglobinemia appear to be dependent on the presence of certain putrefactive bacteria in the intestine, or on an idiosyncrasy to certain drugs (Sollmann,²² van den Bergh,¹³ and Beck⁶). Large doses of nitrates taken by mouth may produce collapse, but rectal injections of smaller doses may cause nitrite poisoning much more quickly than that from oral administration. Children appear to be more susceptible than adults to nitrite poisoning.

The only condition that enters into the differential diagnosis is sulphhemoglobinemia.²³ This condition also produces marked cyanosis and is due to the formation of sulphhemoglobin pigment in the blood from the reduction of hemoglobin. Here, again, the putrefactive bacteria of the intestine are thought to play an important rôle by producing hydrogen sulphide,²⁴ the reducing agent that is apparently concerned in the chemical change.

In sulphhemoglobinemia, as in methemoglobinemia, the oxygen of the pathologic pigment cannot be used

in tissue respiration. In both conditions² there is usually intense cyanosis, diarrhea, weakness, dyspnea, headache and giddiness. The blood and all the organs of the body have a characteristic chocolate brown appearance. If death occurs, it is due to asphyxia.

The sulphhemoglobin and methemoglobin pigments are both found in the red blood corpuscles and can be differentiated only by spectrum analysis.¹³ The two spectral bands are in different positions; the methemoglobin band disappears on the addition of ammonium sulphide to the solution, whereas the band formed by sulphhemoglobin persists.

In a proved case of chemical methemoglobinemia, Duvoir and Goldberg²⁵ recommend the following procedures: stomach lavage, emetics, enemas, blood tests, oxygen, and the administration of alkalis. The same treatment is applicable to a case of sulphhemoglobinemia.

The deduction, finally, seems evident that since bismuth subnitrate may be occasionally, although rarely, a dangerous drug which offers no advantages over other preparations of bismuth, such as the subcarbonate, it has no legitimate place in the treatment of diarrhea.

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FORCED DRAINAGE OF THE CEREBRO-SPINAL FLUID

ITS EXPERIMENTAL BASIS, THE TECHNIC OF CLINICAL APPLICATION, AND THE INDICATIONS AND CONTRAINDICATIONS

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Recently a preliminary report was made on the clinical results of forced drainage of the cerebrospinal fluid in infectious diseases of the central nervous system.¹ Our purpose in the present communication is dual: first, to bring together and summarize the data on the experimental background of the method, data which are now available only in scattered studies; second, to outline the technic of its clinical application.

EXPERIMENTAL BACKGROUND

The physiologic laws involved are those which were demonstrated in the fundamental work of Starling² on the production of lymph, experimental work which covered two decades and which he gathered together in his book on "The Fluids of the Body" in 1909. Secondly, of course, this work is a logical extension of the classic studies of Weed and his associates³ on the special pressure conditions that obtain in the intracranial cavity.

Starling showed that the formation of lymph depended on the fact that, at the arterial end of a capillary, the intracapillary pressure was higher than the osmotic pressure of those constituents of the blood

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2. Starling, E. H.: *The Fluids of the Body*, London, Constable & Co., Ltd., 1909.

3. Weed, L. H.: The Effect of Hypotonic Solutions upon the Cell-Morphology of the Choroid Plexuses and Central Nervous System, *Am. J. Anat.* 52: 253 (Sept.) 1923. Weed, L. H., and McKibben, P. S.: Experimental Alteration of Brain Bulk, *Am. J. Physiol.* 48: 531 (May) 1919.

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16. Hare, J. P.: The Use of Salycylate, *Arch. internat. de pharmacodyn. et de therap.* 9: 441, 1901.

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21. (a) Garrod, L. P.: *Med.* 19: 87 (Oct.) 1925. (b) Miller, Methemoglobinemia in a Child, *Arch.* (c) van den Bergh.

22. Sollmann, Torald: *A Manual of Pharmacology*, ed. 3, Philadelphia, W. B. Saunders Company, 1930 pp. 912-913.

23. van den Bergh, A. A. H., and Hurler, W. H.: On Sulphemoglobin, *J. Physiol.* 36: 62, 1907. Wallis, R. L. M.: On Sulphemoglobinemia, *Quart. J. Med.* 7: 73, 1913. Raven, M. O.: Methemoglobin Due to Poisoning by Antikamnia (Acetanilide), *Guy's Hosp. Rep.* 78: 275 (July) 1928. Mason, V. R., and Conroy, F. D.: Sulphemoglobinemia, *Bull. Johns Hopkins Hosp.* 32: 391 (Dec.) 1921.

24. van den Bergh, A. A. H., and Wieringa, H.: On the Formation of Sulphhemoglobin, *J. Physiol.* 59: 407 (March) 1925.

serum which could not penetrate the capillary walls, the most important of which are the proteins. The osmotic pressure of these nondiffusing colloids of the blood is usually estimated as somewhere around 25 to 40 mm. of mercury and is a force that tends to hold fluid within the vessels. The pressure within the capillary at the arterial end must exceed this, therefore, in order that there may be any formation of lymph at all.

Starling showed, furthermore, that with the fall of pressure within the capillaries and venules, as the blood courses toward the venous end of the system, this intravascular pressure drops below the osmotic "pull" of the nondiffusing colloids, with the result that the lymph is reabsorbed into the vascular system. Thus it happens that from a limb at rest or from an organ at rest there is no flow of lymph. The only exception to this general rule is in the drainage from the abdominal viscera, where certain special conditions prevail which need not be discussed here. For the body in general, the rule holds as Starling stated it: to wit, that there is no flow of lymph from a resting organ.

There are only three ways by which more lymphatic fluid can be produced at the arterial end of a capillary system than can be reabsorbed at its venous end: The osmotic pressure of the blood must be lowered by dilution of the blood stream, the intravascular pressure at the venous end of the system must be raised above that of the nondiffusing colloids by venous obstruction, or there must be an increase of the osmotic pressure of the lymphatic fluid by accelerated processes of metabolism and oxidation which break up into smaller molecules the large molecules of the constituents of the tissue fluids, thus multiplying their osmotic effect.

When one turns to a consideration of conditions within the cranial and spinal cavities, one is faced with an apparent paradox. It is within the rigid confines of the bony skull and spinal skeleton alone that one finds normally a pressure which under ordinary circumstances is greater than atmospheric pressure. The effect of this positive pressure should be to inhibit the production of any transudate from the arterial end of capillaries and to accelerate its reabsorption at the venous end. How, then, is one to account for the fact that it is only here, in the face of this high counter-pressure, that one finds a permanent lake of extravascular fluid? The answer, of course, lies in some property of the cells of the choroid plexus. Starling's work makes it clear that under normal conditions the capillaries which are scattered throughout the parenchyma of the brain and spinal cord cannot be the source of this permanent lake. That this fluid arises primarily from the choroid plexus has, moreover, been proved beyond any doubt. Nor is it necessary to assume that the cells of the choroid plexus possess any special secretory function. The evidence in hand⁴ would suggest rather that their main function is to stand as a barrier against the reabsorption at the venous end of the vessels which Starling showed to be operative throughout the rest of the body. The evidence on this point need not be presented here, but an understanding of the principle involved is essential to the subject.

So much for normal conditions. What, however, will happen if this high intracranial or intraspinal

pressure is reduced to atmospheric pressure, thereby changing the physical conditions of intracranial fluid production to conform to those which obtain throughout the rest of the body? This can be done quite readily by performing a lumbar puncture and allowing the fluid to drain freely for some time. Clearly, under these circumstances the capillaries of the brain and spinal cord should function exactly as do the capillaries of the rest of the body; and the same procedures could then be used here to increase the production of cerebrospinal fluid from the blood stream. That is, the production of fluid could be increased either by raising intracranial venous pressure, by increasing the metabolic activity of the surrounding tissues so as to increase the number of molecules in the tissue fluid, or by lowering the osmotic pressure of the blood stream by dilution. It is the latter step that is used in the procedure which we have called forced drainage.

Forced drainage, then, consists of two steps: first, the reduction of intracranial pressure to atmospheric pressure, in order to make the intracranial conditions of fluid production conform to those of the rest of the body so as to bring into active participation all the capillary bed; second, the dilution of the blood stream by the intravenous injection of hypotonic saline solutions. Under these conditions, not only is the formation of cerebrospinal fluid accelerated⁵ but also it takes place both at the choroid plexus and by active transudation from the capillaries of the parenchyma throughout the brain and spinal cord.⁴ The fluid thus formed courses along the perivascular channels until it reaches the subarachnoid space and then emerges from the body through the drainage tract that has been provided.⁶

This, then, is the fundamental rationale of the treatment of infections of the central nervous system by forced drainage. It remains to point out that, when the formation of cerebrospinal fluid is accelerated by this procedure, no diffuse swelling or hydration of the nervous system occurs,⁴ that little or no increase in intracranial pressure takes place,^{5c} that the fluid actually courses along the perivascular channels until it reaches the subarachnoid space, and that when the perivascular or adjacent perineuronal spaces are choked with inflammatory exudate the passage of this fluid tends to mobilize this exudate and to carry it from the depths of the central nervous system to the surface, and out through the drainage tract.⁷

In experimental work, the procedure has proved to be free from risk. Both sick animals and normal animals have been subjected to this treatment repeatedly, and in no case have injurious results followed. Normal dogs have been given as much as one eighth of their body weight of hypotonic saline solution, with continuous drainage of the cerebrospinal fluid, and this procedure has been repeated at least once every two weeks throughout an entire winter; and throughout that time the dogs lost nothing in weight, vigor, health or activity.⁸ Similarly cats that had been sub-

4. Kubie, L. S.: Changes in Intracranial Pressure During Forced Drainage of the Central Nervous System: The Hydration Factor, *Brain* 51: 244 (June) 1928; The Intracranial Pressure in Health and Disease, Association for Research in Nervous and Mental Diseases, Baltimore, Williams & Wilkins Company 8, 1929.

5. (a) Kubie, L. S., and Shults, G. M.: Vital and Supravital Studies of the Cells of the Cerebrospinal Fluid and of the Meninges in Cats, *Bull. Johns Hopkins Hosp.* 37: 91 (Aug.) 1925; (b) Studies on the Relationship of the Chemical Constituents of Blood and Cerebrospinal Fluid, *J. Exper. Med.* 42: 565 (Oct.) 1925. (c) Kubie, L. S.: Intracranial Pressure Changes During Forced Drainage of the Central Nervous System, *Arch. Neurol. & Psychiat.* 16: 319 (Sept.) 1926.

6. Kubie and Shults.^{5a} Kubie.^{5c} Kubie, L. S.: Forced Drainage of the Cerebrospinal Fluid in Relation to the Treatment of Infections of the Central Nervous System, *Arch. Neurol. & Psychiat.* 10: 997 (June) 1928. Kubie.⁴

7. Kubie and Shults.^{5a} Kubie.^{5c}

8. Kubie and Shults.^{5b} Kubie.^{5c}

jected to experimental meningitis by the subarachnoid injection of irritant dyes or of red blood cells have been put through this procedure many times without untoward results.^{5a} Rabbits have been given intravenous injections of as much as one fourth or one third of their body weight of hypotonic solutions. It has been shown, furthermore, that when slowly administered such massive injections as these can be given with safety and with no rise in venous pressure and no measurable increase in the circulating blood volume; so that it is safe to conclude that there is no overloading of the circulation.⁴

A further subsidiary point that is of interest is the fact that during the course of such drainage there occurs a consistent shift in the type of cell found in the cerebrospinal fluid. During the acute stage of an infection, the earlier fractions of fluid may have many polymorphonuclear leukocytes, whereas the later fractions, which are drained from deep crevices of the central nervous system, become predominantly lymphocytic.⁹

Furthermore, there is indirect evidence, which has not yet been made direct or complete, that this procedure may increase the transfer of immune bodies from the blood to the cerebrospinal fluid, just as it has been shown to increase the protein content of the cerebrospinal fluid and the transfer of certain dyes.^{5b}

It does not seem too much to assert, therefore, that this method of treatment is worthy of careful clinical trial in a wide variety of infections of the central nervous system.

TECHNIC OF CLINICAL ADMINISTRATION

1. The technical procedures that are recommended here must be looked on as tentative, although they are based on an experience of more than 100 separate drainages in more than forty cases, the drainages varying in duration from a few hours to a few days.¹⁰ There are so many variable factors, however, that no absolute laws can be laid down as yet as to the optimal duration of drainage, the optimal concentration, volume or rate of the injection, or the frequency with which the procedure should be carried out. These questions will all have to be settled in the course of further experience.

2. A simple and satisfactory arrangement of the bed and of the patient has been worked out. A Bradford frame is used, which is as long as the bedstead and about 36 to 40 inches in width. This frame is either supported on the frame of the bed with blocks of wood or else hung from the head and the foot of the bed by means of iron hooks. In either case, the hooks or the blocks are of such a size that the head of the frame is about 8 inches higher than the foot. The canvas is stretched on the frame in two pieces, with a gap of about 8 inches, which can be moved up or down in order to be opposite the lower lumbar region of the patient's back. The patient rests quite comfortably on a frame of this kind. He is rolled onto his back after the lumbar puncture is made, so that the needle is dependent through the gap in the canvas. The fluid then collects in a graduated receptacle, which rests on the bed beneath him. Blankets

are draped so as to prevent drafts, which would otherwise sweep under the frame, or an electric light can be placed between the frame and the mattress to make sure that the patient does not become chilled.

The simplest method of arranging the injection is with an ordinary gravity apparatus, only provided some warming device is used to prevent the cooling of the fluid, which would otherwise occur during a slow injection.

3. In any consideration of this procedure, three problems are presented which must be considered more or less separately: (a) the reduction of intracranial pressure; (b) the provision of a steady and constant avenue of drainage; (c) the method of fluid administration. Each of these aspects of technic will be considered in the succeeding sections.

4. Intracranial pressure is reduced by the withdrawal of cerebrospinal fluid. In some patients it is possible to allow the fluid to escape freely and rapidly until the lake of preformed fluid has flowed out to the point at which intracranial pressure and atmospheric pressure balance. At this point the rate of outflow of fluid drops to approximately 1.5 to 2 cc. per hour, and the fluid in the needle can be seen to protrude and retract with each respiration, the drops falling at a rate of one or two every five minutes. There are some patients, however, in whom the escape of even a few cubic centimeters of fluid, with a reduction of intracranial pressure of not more than 20 or 30 mm. of water, brings on a severe headache. With these patients, unless the headache is relieved by ice-water compresses, the withdrawal of fluid must frequently be interrupted by reinsertion of the stylet into the needle, or by the use of a fitted stopcock.

With patients who can be drained rapidly without developing headache or other discomforts, the drainage is allowed to flow until the fluid drops very slowly before the intravenous injection is begun. In the patients who develop headaches with even slight reduction in intracranial pressure, it has been found advisable to begin the intravenous injection even before the reduction of intracranial pressure to atmospheric pressure is complete. Under these conditions, the reduction in intracranial pressure is carried out by slow stages, with frequent interruptions of the drainage; sometimes with alternating periods of intravenous injection and subarachnoid drainage, as well as with the simultaneous administration and drainage of fluid. In this way, intracranial pressure is reduced gradually without causing the patient undue discomfort. Without such precautions, headache, nausea and retching may occasionally occur. The reasons for the differences in these responses are as yet not clear and are being investigated.

5. The administration of fluid involves several variable points; namely, the concentration, volume, rate and duration of the injection. The safest concentration to use is that which is just sufficiently strong to prevent hemolysis of the red cells in a fragility test *in vitro*. This is usually about 0.45 per cent of sodium chloride. It must be remembered, however, that during the intravenous injection the solution is diluted by the blood stream so rapidly that there is less chance for hemolysis to occur at the point of the needle than in the test tube. It is possible, therefore, to use solutions of a concentration that is materially less than that at which hemolysis begins in a fragility test. We have, in fact, injected solutions of as low a concentration as 0.3 per cent without visible hemolysis in the serum at the end

9. Kubie and Shults.^{5a} Kubie (footnote 6, third reference).

10. Retan, G. M.: Treatment of Infections of the Central Nervous System by Forced Spinal Drainage, *New York State J. Med.* 31: 1378 (Nov. 15) 1931; Forced Spinal Drainage in Its Relation to Infections of the Central Nervous System, *J. A. M. A.* 99: 826-830 (Sept. 3) 1932. Retan, G. M., and Kubie, L. S.: Forced Drainage in the Treatment of Poliomyelitis, *Bull. Neurol. Inst. New York*, vol. 1, November, 1931. Kubie and Retan.²

of the treatment. It is clear that the more dilute the solution, the greater the caution with which it should be injected, because with solutions that are at the upper limits of the fragility of the red cells, the rate of injection makes practically no difference, whereas with more dilute solutions than this there will be a limit to the rate at which fluid can be injected without hemolyzing the red cells. It is not possible for us to say yet just where the limits of this velocity and dilution factor lie.

At the beginning of our clinical work with this method we limited ourselves to injections of about 1 liter of fluid. At present, however, we are finding that injections of 2 and 3 liters of saline solution in from one and one-half to two and one-half hours not only increase more strikingly the production of cerebrospinal fluid but lessen headache and enhance the comfort of the patient. It must be borne in mind that any headache or nausea which occurs during the course of the treatment can be eliminated by increasing the rate of fluid administration and slowing the rate of drainage.

6. For drainages of only a few hours' duration, an ordinary lumbar puncture needle is used. When it is desirable, however, to maintain drainage over many hours, as in tuberculous or pyogenic meningitis, it is necessary to use a needle that will not move or shift its position in the tissues. This is because after twenty-four hours the tissues around a needle tend to soften and hold it less firmly, necessitating the readjustment of the needle, or its withdrawal and replacement. This moving of the needle provides the greatest risk of ascending infection. The simplest way devised up to the present is to slip a Swift-wing over the shaft of the needle, screwing it in place on the shaft of the needle against the skin and strapping it firmly to the skin with adhesive plaster. It is also possible to use a specially large needle, which can be forced in around the shaft of the ordinary lumbar puncture needle after this has been inserted. This larger needle is held in place by the surrounding tissues more firmly, and, after it is inserted to the proper distance, the inner lumbar puncture needle is withdrawn, providing a drainage tract of wider bore.

On some occasions it has been found desirable to perform a laminectomy on a single lumbar vertebra and to provide for drainage through a rubber tube or cigaret drain.

It is important to have the patient lying comfortably on his back, with his head and shoulders higher than the lumbar region. At the same time, if the hips sag too much, as sometimes occurs with heavy patients, a sharp lumbar lordosis is produced and tends to obstruct materially the outflow of fluid. In such cases, it is well to support the hips by placing a firm support on the frame of the bed under the buttocks of the patient.

7. Many patients require no sedatives, but for others their use makes the procedure less of a strain. Both with and without sedatives we have had the experience of having patients fall asleep during the treatment. Several sedatives have been used, among the more satisfactory being amytal, 3 grains (0.2 Gm.) by mouth, two hours before the treatment, repeated one hour before the treatment.

For intercurrent symptoms of headache, ice-water compresses are often surprisingly effective.

8. No serious reactions have yet been observed beyond the symptoms of headache and nausea, which

have already been described and the treatment of which has been outlined. Occasionally, chills have occurred either when the patient was allowed to get cold on the Bradford frame or when fluids of too weak a concentration were administered too rapidly with resulting hemolysis. No undesirable after-effects from these chills have been encountered.

9. There remains to discuss only the method of puncture. The puncture is made with the patient on the Bradford frame, curled up on his side as for any ordinary lumbar puncture. Care is taken that the needle is approximately opposite the middle of the gap in the canvas. When fluid appears, the stylet is reinserted and the patient is allowed to straighten out slowly. As measured in lateral roentgenograms, this straightening out of the patient increases the depth from the skin to the subarachnoid space by about one-eighth to one-fourth inch. The needle is therefore thrust in this much farther after the patient is straightened out, and the stylet is withdrawn again to make sure that the fluid is flowing freely. Again the stylet is reinserted, and the patient is slowly rotated onto his back, so that the needle hangs dependent through the gap in the canvas of the frame. The patient is then covered so as to be kept warm, the receptacle is arranged under the needle, the stylet is withdrawn, and the fluid is allowed to flow out at a rate which, as previously explained, is determined by the patient's comfort and freedom from headache. If the patient develops headache rapidly, the rate of withdrawal of fluid is reduced, and the intravenous injection is begun promptly. If, however, the patient does not develop a headache, the fluid is allowed to flow freely until it drops only slowly before the intravenous injection is begun.

INDICATIONS

While our studies of the therapeutic value of this procedure are still in this tentative stage, it is impossible to speak of "indications" for the use of the method. One may say, however, that the experimental and theoretical basis of the method and its proved safety in work on animals and in clinical application justify its trial in almost all forms of acute or chronic infection of the central nervous system. Our own experience covers various forms of syphilis of the central nervous system, different types of pyogenic meningitis, acute and chronic forms of epidemic encephalitis, poliomyelitis, Sydenham's chorea, tuberculous meningitis, and disseminated sclerosis.¹⁰

This is not the place to discuss the therapeutic results that seem to have been achieved in some cases.¹⁰ It may be pointed out, however, that in all of these conditions in which adequate drainage could be established there resulted a definite influence on the course of the disease, and on many symptoms and signs. In syphilis, a modification of an Argyll Robertson reaction has been observed as well as the lessening of intractable pain and improvement in tendon reflexes. In disseminated sclerosis, similar results have been encountered, and in one case there was a return of vision after nineteen months of severe amblyopia. This occurred actually during the course of the drainage. In the acute virus infections, dramatic improvements have accompanied or followed the treatment. In the pyogenic infection, improvement seems to depend on the adequacy with which drainage can be maintained. The results with chorea have been outstanding and will be presented in a separate report. It is not our desire to imply that any

of these results can yet be considered a definite therapeutic achievement of the method. They are evidence, however, that symptoms which may have existed even for a long time do not necessarily rest on irreversible structural alterations in the central nervous system and that their pathologic basis, whatever it may be, is influenced by the procedure we have described.

CONTRAINDICATIONS

The procedure is to be avoided whenever one is dealing with a lesion into which fluid will filter from the blood stream but from which it is impossible for it to escape. It would be dangerous, therefore, in any form of obstructive hydrocephalus, in the presence of a cystic tumor, probably in the face of any area of fresh hemorrhage with engorgement and necrosis. It is also possible that, in cases of acute myelitis in which the cord is so swollen as to cause a block, the procedure would be inadvisable unless there were combined drainages at the cistern and lumbar regions or unless there was a preliminary shrinking of the cord with intravenous injections of hypertonic salt solution. It is also possible that in the presence of extremely thick gelatinous exudate, such as that which is sometimes produced by pneumococcal infections of the meninges, free drainage may be impossible. This point only future experience will settle. It is obvious, therefore, that careful differential diagnoses must be made, and the possibility of such conditions as these must be borne in mind before the method is applied.

It cannot be said that the procedure puts an undue strain of any kind on the body organs in general. There is experimental evidence that there is no material increase in blood volume, no increase in venous pressure, and in consequence no undue strain on the cardiovascular system.⁴ Nevertheless, it is our routine to make a thorough preliminary review of the cardiorenal system.

From the systemic point of view, the only important contraindication is the presence of active infectious or inflammatory processes elsewhere in the body. The increased permeability of capillary walls in such regions tends to increase the outpouring of fluid at the point of inflammation. In certain situations this may be advantageous, as in pyelitis or cystitis; on the other hand, it has given rise to some alarm in cases of severe bronchitis and the like.

SUMMARY

It is possible, therefore, to summarize briefly as follows:

1. A trial of this procedure is indicated in the presence of any acute or chronic infection of the central nervous system; but it is contraindicated whenever an intracranial lesion is suspected into which fluid can be poured without opportunity for free escape, in the presence of cardiorenal deficiency or in the presence of active inflammatory processes elsewhere in the body.

2. In essence, the purpose of all technical manipulation must be to reduce intracranial pressure to atmospheric pressure, rapidly when conditions so permit, or slowly and cautiously when this is necessary, to avoid discomfort for the patient. Throughout this procedure, hypotonic salt solution is administered in large volumes, ranging from 1 to 3 liters in the course of from one to three hours. The concentration of the salt solution varies downward from 0.45 per cent, depending on the fragility of the red cells of the

particular patient and the rate at which the fluid is to be administered. The duration of drainage varies from three hours to several days. The frequency of repetition is rarely more than once a week for the short, repeated drainages but may be maintained continuously over as long as two or three weeks in the face of more desperate and acute infectious processes.

3. The theoretical basis for the method lies in the fact that under these conditions cerebrospinal fluid is formed not only from the choroid plexus but by transudation through all the capillaries of the central nervous system, the new fluid thus formed traveling along perineuronal and perivascular spaces to the subarachnoid space and out through the lumbar needle. This affords a natural process of internal lavage, which influences the accumulation of inflammatory products and the course of infectious processes without increasing intracranial pressure or causing hydration of the parenchymatous tissues.

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FATAL FUSOSPIROCHETAL ANGINA

REPORT OF SEVEN CASES

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In discussing the differential diagnosis of diphtheria, Plaut,¹ in 1894, described another form of angina in which he found constantly fusiform bacilli and spirochetes, "Miller'schen Bacillen and Miller'schen Spirochaeten." In 1895, Vincent,² writing about the fusospirochetal etiology of hospital gangrene, related that the fusiform bacillus was very similar to a type of noncultivable bacillus found in certain "diphtheroid anginas," which he stated that he observed for the first time in 1893. However, as early as 1883, von Strümpell spoke about "angina necroticans," which in all probability was the fusospirochetal angina. For obvious reasons, fusospirochetal angina is a more descriptive name than "Plaut-Vincent angina."

That these organisms are present in the normal healthy mouth is generally known (Plaut, Vincent, Muhlens, Kolle, Onorato, Beck, Tenney and others³); moreover, in a healthy mouth they are not very numerous. The exact classification of these organisms is still somewhat doubtful (Kolle and Hetsch⁴). There is a difference of opinion regarding the relationship of the fusiform bacillus and the spirochete associated with this type of angina. Davis and Pilot⁵ showed the invariable association of both the fusiform bacillus and the wide-coiled spirochete. A difference of opinion still exists regarding the relationship of the two organisms. Tunnick⁶ advanced the idea that the spirochete is merely a highly differentiated form of the same micro-organism. Pilot and Bramer,⁷ after extensive

1. Plaut, H. C.: Studien zur bacteriellen Diagnostik der Diphtherie und der Anginen, Deutsche med. Wchnschr. 20: 920, 1894.

2. Vincent, H.: Sur l'étiologie et sur les lésions anatomo-pathologiques de la pourriture d'hôpital, Ann. de l'Inst. Pasteur 10, 1896.

3. Kolle, W., and von Wassermann, A.: Handbuch der pathogenen Mikroorganismen, Jena, Gustav Fischer 7, 1913.

4. Kolle, W. and Hetsch, H.: Die experimentelle Bakteriologie und Infektionskrankheiten, ed. 7, Berlin, Urban und Schwarzenberg, 1929.

5. Pilot, Isadore: Studies of Fusiform Bacilli and Spirochetes, J. Infect. Dis. 32: 159 (Feb.) 1923.

6. Tunnick, J. M.: The Microscopic Appearance in Ulceromembranous Stomatitis, J. Infect. Dis. 25: 132 (Aug.) 1919.

7. Pilot and Bramer: Fusospirochetal Infections of Mouth, J. Am. Dent. A. 15: 1763 (Sept.) 1928.

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experimentation, concluded that the fusiform bacillus and the spirillum are different forms in the life cycle of one organism. But whether these organisms represent a true symbiotic relationship or whether one is the transitional form of the other, has not been definitely settled.

The reason these organisms pass from a relatively saprophytic state to a definite pathogenic state is not clearly understood. Local infection, usually dental caries and pyorrhea alveolaris, local trauma, systemic infections and intoxications have been suggested. Spirochetes and fusiform bacilli have been aptly called opportunists by Pilot,⁷ becoming pathogenic only when the integrity of the tissues with which they are in contact is altered. Primary chemical factors have been implicated by Beck.⁸ The question of other and more virulent strains of the organisms has been offered by the presence of epidemics described chiefly during and after the war. Of course, it must not be forgotten that when extensive ulcerations are produced in the mouth the other organisms present, especially the staphylococci and streptococci, play a very important rôle as regards systemic invasion and involvement.

PATHOLOGY

The lesions observed due to these organisms are of a great variety, depending to a large extent on the underlying factors, the resistance of the patient, and the behavior of the pathogenic processes. In all, the tendency to necrosis and the production of a foul smelling lesion are the striking characteristics. From the standpoint of pathology, the disease presents great contrasts. In cases of pulmonary gangrene, the tissues seem unable to set up an adequate defense against the gangrene process, which spreads rapidly in every direction, destroying tissue as it goes. The microscopic picture has proved of great interest. The microscopical picture complete absence of a leukocytic reaction is conspicuous and conforms to the blood picture of an uncomplicated Vincent's infection. The number of neutrophil leukocytes is never elevated in the peripheral blood. Vincent, Krebs and Gross⁹ have studied sections of the ulcerous membranous lesions of the tonsils, and Ellerman¹⁰ of the uvula, and observed a great variety of bacteria, especially cocci, in the external necrotic layer; in the middle zone, between necrotic and normal tissue, there were a large number of fusiform bacilli, often in palisade arrangement. Spiral organisms were found in enormous numbers in the zone separating the spirilla necrotic epithelium and the living tissue, the spirilla being the more abundant and in advance of the bacilli. These organisms were not associated with cocci or other bacteria at the line of advancing necrosis.

In recent years, many successful attempts have been made to reproduce the disease experimentally. In the original investigations, neither Plaut nor Vincent succeeded in transmitting the infection to animals. Smith¹¹ succeeded in transferring infection from the pharynx of the patient to the groin of guinea-pigs. He then removed the fresh pus from the experimental abscesses in the groin of the guinea-pigs and injected it directly into the trachea of rabbits while the rabbits were under a deep ether anesthesia. Ten rabbits received injection

with pus from these abscesses produced in the guinea-pig. Of these ten animals, four developed lung abscesses, three gangrene, two pneumonia, and one bronchiectasis. Seguin¹² and Kritschewski of Paris were able to produce lesions typical of Vincent's infection, in guinea-pigs, and subsequently recovered both organisms in culture. Neither micro-organism alone was capable of producing the lesions of the disease.

In spite of isolated warnings, it has been the opinion for some time that fusospirochetal angina is rather a benign affair. As late as 1929, Kolle and Hetsch¹³ stated that the general condition of the patient is not seriously troubled. Albray,¹⁴ however, believes that "this is a condition of serious and conscientious attention." The number of reported fatal cases has been relatively few. There is every reason to believe that the fatalities are not so rare as reports of cases might indicate. In 1904, Bruce¹⁵ reported a fatal case in a girl, aged 8 years. The ulcerations extended throughout the fauces, the base of the tongue and the epiglottis. He reported another case in a boy, aged 9 years, who died after a prolonged course of thirty-seven days, with ulcerations extending to the thyroid cartilages, and with multiple lung abscesses. Halstead¹⁶ reported two fatal cases and cited the fatal cases of DiCorlis, Gilberti and also Meyer, a fusospirochetal angina developing in the latter during a bacillary dysentery. Heinemann,¹⁷ in 1917, described a large series of fatal cases, almost twenty-five, occurring in an epidemic in Adrianople, the fusospirochetal angina extending to a ulcerations and bronchopneumonia. Husik¹⁸ reported a fatal case occurring during a secondary anemia, the ulcerations extending to the upper part of the bronchial tree.

REPORT OF CASES

From 1929 through the first six months of 1932 there were twenty-one patients with fusospirochetal angina admitted to the wards of the Cincinnati General Hospital. These cases were in the medical, dermatologic and otorhinolaryngologic service. In almost every case, cooperation with the dental service was had. These patients were all admitted because of severity of their symptoms. In a busy general hospital, the ordinary case of stomatitis ulcerosa is treated in the outpatient dispensary. In 1929 there were ten admissions with one death; in 1930, six admissions with one death; in 1931, three admissions with three deaths; during the first half of 1932, two admissions with two deaths. There were, then, a total of seven fatal cases. A brief summary of the fatal cases follows:

CASE 1.—J. E., a Negro, aged 41, a laborer, was admitted with complaints of toothache and difficulty in swallowing, of ten days' duration. Two days prior to admission, his neck began to swell. The patient appeared uncomfortable but not acutely ill. The temperature was 100 F. There was marked fetor ex ore. The mouth showed dental caries and pyorrhea, with an alveolar abscess in the lower jaw. There was a diffuse cellulitis of the entire neck, with a small area of fluctuation in

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13. Albray, R. A.: Vincent's Angina, Lancet 2: 135 (July 16) 1904.
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15. Halstead, A.: Beobachtungen über Stomatitis ulcerosa, Angina Vincent, und Noma, Berl. klin. Wchnschr., 1919, No. 5; Dermatol. Centrbl., 1919, p. 152.
16. Heinemann, Eugene: Ueber Plaut-Vincent'sche Angina, Ztschr. f. Hyg. u. Infectiönskr. 97: 162, 1922; Zentrabl. f. Haut. u. Geschlechtskr. 7: 495, 1922.
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the digastric triangle. Spontaneous rupture of the submandibular abscess occurred shortly after admission. The opening was enlarged with multiple incisions, and irrigations with saline solution and surgical solution of chlorinated soda were instituted. He continued to have an irregular intermittent fever. At no time was there any respiratory difficulty. His condition grew progressively worse and he died fourteen days after admission. Postmortem examination was refused. Save for a moderate leukocytosis, the blood examination had been negative. Blood cultures were repeatedly sterile. The blood Wassermann reaction was negative. Roentgen examination of the chest revealed only slight apical pleurisy and increased bronchial markings. There was no widening of the mediastinal area. Fusiform bacilli and spirochetes were found in great numbers in the mouth, in the alveolar abscess, and in the submandibular abscess. The patient had had the usual therapeutic measures.

CASE 2.—R. W., a Negro, aged 24, a laborer, had been admitted three times during the past year for a fusospirochetal angina, the last admission five months previously. Attendance at the outpatient dispensary had been very irregular. Active symptoms dated three weeks prior to entrance. On admission the patient was chronically and severely ill. The temperature was 99.8. Feter ex ore was very pronounced. There was extensive infection of the teeth and gums with numerous small, greenish gray ulcers on the mucosa of the lips. The remainder of the examination was entirely negative. The ulcerations continued to spread until the entire pharynx was involved. He had an irregular septic type of fever. No localizing signs were present in the heart or lungs. He grew progressively worse and died thirty-three days after admission. The blood examination had shown repeatedly a moderate secondary anemia (3,000,000) and a moderate leukocytosis (from 15,000 to 16,000), always with a polymorphonuclear increase. Large numbers of fusiform bacilli and spirochetes were found in the ulcers. The sputum was negative for acid-fast bacilli. Blood cultures were sterile. The blood Wassermann reaction was repeatedly negative. Roentgen examination of the thorax had shown only a slight pleurisy. Locally, the patient received applications of solution of potassium arsenite, arsphenamine, potassium permanganate and sodium perborate. Frequent intravenous injections of neoarsphenamine and intramuscular injections of sulpharsphenamine were administered. The patient received large quantities of dextrose intravenously. Postmortem section showed numerous ulcers covered with a greenish gray exudate extending throughout the entire mouth, tongue and larynx, and to the middle third of the esophagus. The bronchi were clear and the lungs showed only pulmonary edema and old fibrinous pleuritis. The remainder of the viscera showed severe toxic changes.

CASE 3.—S. T., a Negress, aged 29, a maid, was admitted with complaints of sore tongue and hoarseness of some two weeks' duration. The only other relevant details in her history were twenty-one intravenous injections for "bad blood" during the past year. However, no injections were given six months prior to admission. There had been no intramuscular therapy nor any known history of mercurial therapy. The patient appeared acutely and severely ill. The temperature was 99.4. She was not hoarse. The skin was clear. Definite feter ex ore was noted. Movement of the jaws was extremely painful. Dental caries and pyorrhea were present. The mucosa of the lips, cheeks, gums, tongue and soft palate was covered with ulcers varying in size from 0.25 to 0.5 cm. Some were covered with a serosanguineous exudate and some were covered with a thick white exudate like thrush. There was no difficulty in breathing. There was no adenopathy. The remainder of the physical examination was negative. The ulcerations continued to grow and to spread throughout the retropharynx. Several days after admission, irregular erythematous areas developed on the dorsum of each hand. These lesions developed rapidly into confluent bullae filled with a serosanguineous fluid. Similar lesions appeared in each inguinal region, but not in the vagina at that time. The bullae ruptured very shortly, and irregular shallow ulcers with a reddish base appeared. Under continual wet dressings, these were fairly "clean" yet continued to spread slowly. The lesions in the mouth also spread and became more painful. The patient lapsed into coma and died in convulsions

sixteen days after admission. Repeated smears from the mouth had shown staphylococci, streptococci, many fusiform bacilli and spirochetes. Smears from fresh lesions on the hands and in the inguinal regions had shown no organisms at all. Culture from the mouth, hands and inguinal area on meat infusion agar, dextrose ascites agar, blood agar and beerwort agar, and dextrose ascites broth showed only *Staphylococcus albus*. The cultures had been done at various oxygen tensions. Blood examination revealed normal red counts and cells. The white cells varied from 5,000 to 5,400, with an average of 32 per cent lymphocytes, 65 per cent polymorphonuclears and 3 per cent eosinophils. The urine showed numerous leukocytes and albumin. Blood cultures were repeatedly sterile. The blood Wassermann reaction was weakly positive. Locally the patient had been treated with potassium chlorate solution, gentian violet and potassium permanganate. She received frequent injections of neoarsphenamine. Postmortem section revealed extensive greenish gray ulcers involving the entire pharynx; the larynx, the trachea and bronchial tree were clear. The esophagus was a dull purplish red and showed small greenish ulcers in the lower third. The stomach and distal portion of the ileum had the same color without ulceration. The typical ulcers were found in the inguinal regions, vagina and cervix. The lungs were edematous. There was also marked cerebral edema. Toxic changes were evident in the remainder of the viscera. Smears from all these ulcers showed staphylococci, streptococci, fusiform bacilli and spirochetes. Cultures on the various mediums mentioned showed only *Staphylococcus albus*.

CASE 4.—C. J., a Negress, aged 41, a maid, had a sore mouth of three weeks' duration and, two days before admission, she began to have difficulty in breathing. Because of the patient's condition, it was difficult to obtain an adequate history. The patient was very obese and markedly dyspneic; she appeared seriously ill. The temperature was 100. There was no feter ex ore. The gums were purplish red, spongy, and covered with small grayish ulcers. The tongue was slightly edematous and covered with fine ulcerations. The tonsils were enlarged. Because of the marked respiratory difficulty, a tracheotomy was done, but the patient died shortly afterward. Smears from the ulcers showed numerous fusiform bacilli and spirochetes. The white blood count was 30,000, with 82 per cent polymorphonuclears. No additional laboratory work was done. Postmortem section disclosed numerous ulcers about the gums, tongue and buccal mucosa. The epiglottis and arytenoids were edematous and covered with a fine granular exudate. There was edema of the tracheal mucosa. The lungs were normal save for numerous petechial hemorrhages in the pleura. One portion of the right lobe of the thyroid was calcified; the left lobe was filled with blood and fibrous tissue and showed marked degeneration. The esophagus was normal, but there were numerous hemorrhagic areas throughout the rest of the gastroenteric tract. Except for a "flabby" myocardium, the heart showed no changes. The perivertebral lymph nodes were enlarged, were soft and contained areas of congestion. The hilar nodes were boggy and acanthotic. Small hemorrhagic areas were present in the spleen. The suprarenals showed no gross changes. Toxic nephrosis was evident in the kidneys. The vagina was clear. Smear from the ulcers showed numerous fusiform bacilli and spirochetes. Blood culture taken at the postmortem examination was negative.

CASE 5.—Q. A., a Negress, aged 44, a laundress, had a sudden onset of paralysis of the entire right side of the body, six days before admission. The day before admission, swelling of the right side of the face occurred, and the patient complained for the first time of a sore throat. The patient was obese and appeared severely ill. The temperature was 100.6; pulse, 102; respiration, 20. She was completely oriented; she had an indistinct, "mushy" speech. There was a complete flaccid right hemiplegia. Marked feter ex ore was noted. There was a soft cold, painless, pitting edema of the left side of the face. There was a blackish green exudate about the gum margins, palate and tongue. The retropharynx was not clearly seen. The trachea was in the midline. The heart was enlarged to the left, with a tympanitic aortic second sound and an apical systolic murmur. The peripheral blood vessels were very firm, of equal caliber and not especially tortuous. The blood pressure was 250 systolic, 130 diastolic. Rhonchi were present

throughout the lungs. No ulcers were present in the vagina. The patient continually drooled green exudate from the mouth; later there was considerable oozing of blood from various ulcerations on the lips. She had an irregular intermittent fever. She died nine days after admission. The blood examination was negative except for a moderate leukocytosis. Urinalysis revealed a trace of albumin. Smears from the mouth lesions had large quantities of fusiform bacilli and spirochetes. The blood and the spinal fluid Wassermann reactions were negative. Extensive local treatment was administered for the oral sepsis, and intramuscular injections of a bismuth compound and intravenous injections of neoarsphenamine were administered. Post-mortem section was refused.

CASE 6.—L. H., a Negress, aged 51, was admitted because of a painful mouth and a skin eruption, both of some fourteen days' duration. The previous history was entirely irrelevant. The patient appeared uncomfortable but not severely ill. There was a generalized eruption of small discrete and confluent bullous lesions, distributed chiefly on the extremities and about the navel. The lesions were most numerous on the legs. There were a few small areas about the breast, lips, nose and back. The skin adjacent to these lesions showed practically no inflammatory reaction. There was no generalized glandular enlargement. Numerous greenish gray, discrete and confluent shallow ulcers were seen about the lips, gums and tonsils. Save for a generalized arteriosclerosis, the remainder of the examination was irrelevant. The fundus examination was negative. All the ulcers spread locally, and many new areas appeared on the abdomen and also about the vagina. The patient continued to grow weaker and died nine days after admission. The blood examinations were negative. The urine showed only an albuminuria. The blood urea nitrogen and carbon dioxide were normal. The Wassermann blood and spinal fluid reactions were negative. Repeated blood cultures were sterile. Smears from the mucous membranes of the mouth, nose and vagina showed numerous fusiform bacilli and spirochetes. Smears from the skin lesions showed only staphylococci. Treatment consisted in mouth irrigations with hydrogen dioxide, potassium permanganate and potassium chlorate; peroxide and arsphenamine applications to the nose, and tannic acid dressings to the skin. Neoarsphenamine and tryparsamide were given intravenously. Post-mortem section was refused.

CASE 7.—V. C., a Negro, aged 42, a chauffeur, was admitted with a history of gradual loss of weight and "weakness" of four or five weeks' duration. Four days before admission, he complained of a sore mouth and for the first time noticed a generalized skin eruption. The remainder of the history was entirely negative. The patient appeared chronically and severely ill. The temperature was 102; pulse, 140; respiration, 40. There was a generalized eruption of small, circular, slightly elevated, dark red, painless lesions distributed over the entire body, including the palms and soles, and most marked on the thorax. Fetor ex ore was marked. There were small grayish ulcers on the gums. An irregular, easily removed, grayish white, fibrinous exudate was seen over the palate, pillars and tonsils. The lungs showed some dullness over the left apex posteriorly, with increased intensity and roughening of the breath sounds there. Except for a localized systolic murmur, the heart examination was negative. Abdominal and rectal examination was negative. No localizing neurologic signs were evident. The patient became moribund shortly after admission and died on the third day. The red blood cells numbered 2,400,000, with hemoglobin 50 per cent. The white cells varied between 3,600 and 4,200, with 14 per cent lymphocytes, 8 per cent large mononuclears and 78 per cent polymorphonuclears. The urine showed albumin and a few hyaline casts. The blood Wassermann reaction was strongly positive. The blood culture was sterile. Numerous fusiform bacilli and spirochetes were found in the exudate from the throat. Roentgen examination of the thorax was essentially normal. The patient had been given intravenous injections of neoarsphenamine and local irrigations for the mouth lesions. Post-mortem section was refused.

ANALYSIS OF CASES

1. All patients dying with a fusospirochetal angina at the Cincinnati General Hospital from 1929 to 1932 were adult Negroes.

2. The patients had been seriously ill on admission, usually with extensive ulcerations.

3. Six of the patients had extensive chronic dental infection.

4. None of the patients had had regular therapy for their dental infection. From this information, then, neglect was an important factor.

5. Extensive ulceration was active in every case except case 4, in which edema and septicemia played important rôles, out of proportion to the extent of the local lesions.

6. In some of the cases, during therapy and at the post-mortem examination, the spirochetes were rather difficult to find. Decrease of "superficial" spirochetes, then, was not associated with improvement. The spirochetes are reported to disappear from the surface rather quickly after death.

7. Syphilis was only an associated factor in two cases, and in neither of these had mercurial therapy been given.

8. Routine blood studies were not abnormal save in case 7, in which a definite secondary anemia and malignant leukopenia were found.

9. Skin eruptions were associated in three of the cases.

10. During their period in the hospital, all had practically the conventional modern therapy.

11. Post-mortem examinations were obtained in three cases. Extensive local ulcerations were noted in two cases, and laryngeal edema and septicemia were the important factors in the other case. No lung abscesses were found. No marked gastro-enteric ulcerations were seen.

COMMENT

There has been no study of fusospirochetal angina in the different races. Although no definite figures are available, other than the small series presented here, it is our opinion that the condition is just as common in the urban Negro as in the urban white person. In regard to the severity, the evident factor of neglect of oral sepsis seems strong in this series. In 1917, Heineemann reported an epidemic of fusospirochetal angina with a very large series of fatal cases. This epidemic occurred in Adrianople.

The usual points in a clinical differential diagnosis need not be mentioned.* However, a few facts bear repetition. No diagnosis can ever be made without a positive smear, and in an active untreated case the organism ought to be very numerous, a quantitative difference from the "normal." Furthermore, if streptococci are not found in an acutely involved throat, the condition is either a fusospirochetal angina or diphtheria. It is necessary to get the material from deep in the tissue, as the spirochete is not abundant superficially. This has been shown by the histologic studies of Seguin,¹⁹ Bouchet,²⁰ Logeais, Mangabeira²¹ and Zinserling.²² There is no specific blood picture for this angina, although lymphocytosis and eosinophilia have

19. Seguin, P.; Bouchet, H., and Logeais, P.: Etude histobactériologique d'une angine de Vincent's aigue, *Ann. d. mal. d. l'oreille, du larynx, du nez et du pharynx* 43: 435, 1924; *Zentralbl. f. Haut- u. Geschlechtskr.* 15: 325, 1924.

20. Bouchet, Maurice, and Louis-Henri Leroux: Angine de Vincent et spirillose intestinale, *Progrès méd.* 48: 431, 1921; *Zentralbl. f. Haut- u. Geschlechtskr.* 3: 530, 1921.

21. Mangabeira-Albernaz, P.: The Etiology and Etiological Treatment of Vincent's Angina, *Laryngoscope* 39: 1 (March) 1929.

22. Zinserling, W. D.: Ueber die fuso-spirochätose Gangrän und einige verwandte Prozesse vorzugsweise bei Kindern, *Path. anat. abt. Staatsinst. f. Exper. Med. Leningrad, Veroff. a. d. Kriegs u. Konstitutionspath.* 5: 1, 1928; *Zentralbl. f. Haut- u. Geschlechtskr.* 27: 650, 1928.

been mentioned. The Wassermann test for fusospirochetal angina per se is not positive.

A fact that has not been stressed sufficiently is the frequent "secondary" or associated factors of fusospirochetal angina. This was discussed for the first time by Vincent in 1899. In every case an attempt should be made to find the systemic or local causes making for increased virulence of the organisms. A fusospirochetal angina that has once become extensive will mask effectively any local picture. Especially in the primary blood dyscrasias in which there is marked weakening of the body defenses does this angina assume huge proportions. This is most frequently associated with agranulocytic angina and the leukemias. Daito²³ describes a case associated with leukemia, Beck²⁴ a case with an aleukemic leukemia, Vogl²⁵ a case with an infectious mononucleosis, and Zikowsky²⁶ an angina also with the same type of case. An extensive fusospirochetal angina may mask chronic granulomas or tumors in the mouth. Any type of ulceration in a so-called dirty mouth is potentially liable to infection with fusiform bacilli and spirochetes. Gärtner,²⁷ unlike other authors, believes that a double infection can occur with diphtheria in small children and that therapy should be instituted for each.

As already noted, skin eruptions were observed in four cases. Munkerrem²⁸ describes a case of this type of angina with a pemphigoid skin eruption. Perry²⁹ reports three cases presenting an erythema exudativum multiforme. Gilman³⁰ has reported a case of fusospirochetal infection of the umbilicus with a pemphigus vulgaris, which occurred two months after a "sore throat."

For fusospirochetal angina, the therapeutic principles proposed by Mangabeira³¹ should be followed. These have been based on a study of the pathologic anatomy:

1. The remedy should be absorbed to a greater or lesser extent by the tissue.
2. The remedy should be antiseptically active for an appreciable length of time.
3. The remedy should be neither caustic nor destructive.
4. It should have a dissolvent action on necrotic tissue.
5. Its antiseptic action should be specific on one or the other of the symbiosis.

The simple, mild cases can be made inactive by the usual oral hygiene with mild local applications. When the case does not respond rather quickly and the lesions begin to spread and systemic reactions become manifest, the case should early be considered serious. Almost all known antiseptics have been used in the treatment of this condition. The solutions most commonly used in the local treatment are sodium perborate,

potassium chlorate, hydrogen peroxide, potassium permanganate and solutions of arsphenamine, neoarsphenamine and acetarsone. Laurens³¹ states that bismuth powder is much less irritating locally than the arsenicals. Harrell³² advises a glycerin bismuth solution. The caustics usually advised, chromic acid, trinitrophenol, silver nitrate and trichloroacetic acid of themselves produce ulcerations, which in turn become infected. Since the hopelessness of extensive ulcerations has been seen, general measures should be instituted at once when the case does not respond. The arsenicals arsphenamine, neoarsphenamine and sulpharsphenamine are usually recommended. At present there is no definite information as to their action in fusospirochetal angina. This angina has been only rarely reported as occurring during arsenical therapy for syphilis,³³ and the cases have been very mild and responded to local treatment. When this condition does occur during syphilitic treatment courses, a mercurial stomatitis should be suspected as a predisposing factor. It must be remembered that these measures are recommended only for the fusospirochetal angina, and the "primary condition," if detected, must be treated accordingly.

Fusospirochetal angina, then, can be a very serious disease, not only because of its direct ability in causing the death of the patient, but also because in its so-called chronic form it can give rise to pulmonary abscesses, pulmonary gangrene, putrid otitis media and gangrenous colitis.³⁴ It can also give rise to metastatic lesions almost anywhere on the skin and especially on the genitalia. Schmitt³⁵ observes that the areas of predilection are about the lower incisors, the last molars and, finally, in the tonsils. The prophylaxis, then, rests in the hands of the dentists in the maintenance of good oral hygiene, as well as in the hands of the laryngologist, who should be on the lookout for tonsils chronically infected with these organisms. As evidenced by the cases reported here, the neglected cases come to extensive ulceration and then to death in spite of "adequate" therapy.

SUMMARY

1. Seven patients dying with a fusospirochetal angina were all adult Negroes from among twenty-one patients (52 per cent Negroes) admitted for a fusospirochetal angina to the Cincinnati General Hospital during the period 1929-1932.

2. When extensive ulceration has occurred, the hopelessness of all forms of therapy is evident.

3. The secondary or associated factor of fusospirochetal angina is of frequent occurrence.

4. With a fusospirochetal angina, death can occur from extensive spread in the mouth and adjacent structures, offering a portal of entry for other organisms without extensive ulcerations, causing laryngeal edema, contributing to the toxemia of the primary or associated condition, and indirectly giving rise to metastatic lesions elsewhere in the body.

1316 Medical Arts Building.

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Clinical Notes, Suggestions and New Instruments

REPORT ON A GROUP OF FIFTY CHILDREN DICK-TESTED EIGHT YEARS AFTER IMMUNIZATION AGAINST SCARLET FEVER

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In the spring of 1925, stimulated by the encouraging reports of Drs. George and Gladys Dick, I sounded several parents among my private patients on the subject of immunizing their children against scarlet fever, and finding a most encouraging response from them I sent out to a selected group a form letter, stating how matters stood and expressing my willingness to undertake the work free of charge for those who wished to have it done. Nothing was guaranteed further than that it looked like a hopeful procedure which promised excellent results for the future.

Through the generosity and the helpful cooperation of the department of health of New York City, material was obtained and 122 children between the ages of 3 and 15 years were tested. Of these, 101 gave positive reactions. This large proportion—nearly 83 per cent—seems excessive when compared with other reports, but on consideration of the nature of the group I do not find it so. These were all privileged children, carefully sheltered from infections. For the most part, they belonged to members of the faculty of a large university, and I do not believe it would be extravagant to say that, were a survey to be taken, it would be found that a correspondingly low incidence of other reactions exist, such as the Wassermann and the Pirquet or the Mantoux test. Incidentally, it lends credence to the popular belief that well cared for children are more liable to scarlet fever than others. Witness, in comparison, the recent report from an orphanage in Philadelphia of Dick tests on 551 boys with only 94 (17 per cent) positive reactions.¹

Of the twenty-one children who gave negative reactions, three had a history of scarlet fever; nine had very slight reactions that were called plus-minus and were disregarded; of the remaining nine, none had any history of having had scarlet fever, but in two of the families one each of these children had been thoroughly exposed by another case in the home.

Of the 101 children positive to the Dick test, 83 were given three doses of dilute toxin, in the dosage then advised by the Dicks: 500, 1,000 and 1,500 skin test doses. Within six months, nearly but not quite all were retested, and of those who were still positive twenty-eight were given two or three larger doses, depending on the degree of their positive reaction. At one time or another in the intervening years many of these children have been retested—after some known exposure or in the course of testing younger members of the family before immunization, or, as in the case of my own five children, to satisfy professional curiosity. With one exception they have all tested negative.

And now, with such a decent interval as eight years to fall back on, it is interesting to round up a group of these erstwhile children in an effort to see whether they are still immune to scarlet fever. It seems significant that with the hundreds of cases reported weekly throughout the state in the past two years, not one of these children has picked it up.

Although I had hoped to have the group a little larger, I was glad enough, in a community with such a shifting population, to assemble a total of fifty. These were tested, with material furnished by the New York state laboratories at Albany, in two groups on two consecutive Saturday mornings, the readings being taken the following forenoon. As in the original testing eight years before, the degree of cooperation and the interest shown was pleasant to see.

Of the fifty tested, thirty-two (64 per cent) were definitely negative; eighteen (36 per cent) were slightly positive. By slightly positive I mean the usual reaction so indicated—slightly pink, from 1 to 1.5 cm. in diameter, and without tenderness or swelling. Several patients reported itching. There were no

greater degrees of positive reaction; 0.2 cc. of the dilute toxin had been used for the test, with 0.1 cc. of the prepared control solution on the other forearm.

Five children had reactions at the control, definitely reddened areas from 0.5 to 1 cm. across. It was interesting to note that one of these children had asthma rather badly; another was his smaller brother; a third had had severe serum sickness on two occasions following the use of antitetanic serum, and a fourth was subject to hives. The fifth child, a girl, was a cretin, and from the age of 2 years she has taken 5 grains (0.3 Gm.) of thyroid daily. (She is now 11 and normal in both mental and physical development.)

Of the eighteen children who gave slightly positive reactions there were twelve who, being negative after the original three doses eight years ago, were not given further doses. Only six who had received the larger number of doses had apparently outworn their immunity to become positive again. With this in mind, I do not think it illogical to assume that had all of these eighteen children been given the full number of doses the percentage of immunes would have been noticeably higher. To counterbalance the six who, despite the larger number of doses received, are again positive, I find ten who had only three doses eight years ago who are still negative.

None of these fifty children have received doses as large as are now given, and it would be interesting to compare a similar group over an equal period of time who have received the larger dosage. I believe that the degree of immunity found would be gratifying.

SUMMARY

1. In 1925, 122 children from private general practice, between the ages of 3 and 15 years, were tested for susceptibility to scarlet fever. Eighty-three per cent (101) gave a positive reaction to the Dick test, while 17 per cent (21) were negative. Of the 101 who were Dick positive, 83 were immunized.

2. In 1933, eight years later, fifty of the eighty-three children immunized in 1925 were retested, with the following results:

Of this group of fifty children, 64 per cent (thirty-two) were negative, while 36 per cent (eighteen) were slightly positive.

Of these fifty children, twenty-two had received three doses of dilute toxin, and after eight years ten of these were negative and twelve slightly positive. Twenty-eight had received five or six doses, and after eight years twenty-two were negative (78 per cent) and six were still slightly positive.

3. Dilute toxin, given in adequate dosage, confers an immunity of at least eight years in a high percentage of persons susceptible to scarlet fever.

Sheldon Court.

DERMATOCONJUNCTIVITIS DUE TO LASH-LURE, AN EYELASH AND EYEBROW DYE

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This report on a case of dermatconjunctivitis due to Lash-Lure, a new eyelash and eyebrow dye, is offered for record.

The dangerous possibilities of certain types of hair dye has, of course, been known to the medical profession and to dermatologists in particular for many years. The use of such dyes has, however, been restricted to the scalp hair. Extending their use to the eyelash field is new and a reaction as severe as that which occurred in this patient deserves more than the passing comment ordinarily given by dermatologists to the frequent cutaneous reactions to cosmetics observed by them.

Darkening of the eyebrows and eyelashes is accomplished in two ways: one by coating the hairs (Mascara, lamp-black) and the other by actually staining them. Intolerance of the conjunctiva and eyelids to Mascara is well known but rarely produces more than a very mild reaction—commonly only a pruritus or burning if it gets into the eyes. However, actual dyeing of the lashes, as in the case reported, carries with it all the dangers with which dyeing of the scalp hair is attended.

The dye used in this case is advertised as "Lash-Lure"—a new improved eyebrow and eyelash dye. It is manufactured by Lash Lure, Inc., under a copyright from Lash Lure Research Laboratory, Inc., of Los Angeles.

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REPORT OF CASE

A woman, seen, Feb. 15, 1933, had a very itchy, slightly painful redness and a slight swelling of both lids of the left eye. The redness was especially intense and bright at the margins of the lids. She had the day previously been examined and told by the ophthalmologist that there was nothing the matter with her eyes. After four or five days' treatment with wet compresses, during which there was marked improvement, although the eyelid margin remained quite red, the patient was referred back to her ophthalmologist for the treatment of a beginning conjunctivitis. Following the flushing out of the eyes, and metaphen ointment locally, within eight hours an exceedingly severe reaction developed in which there was not only marked swelling of the skin, eyelids and surrounding skin but severe edema of the conjunctiva of the left eye. The patient was hospitalized: wet compresses were reapplied until all the edema and much of the redness had disappeared. After

either metaphen or the chemicals used to flush the eye on her second visit to the ophthalmologist. Entire disappearance of the symptoms and signs was brought about only by removal of the eyelashes.

1714 Pine Street.

[NOTE.—The Bureau of Investigation of the American Medical Association has had a record of Lash-Lure for some time. The product does not contain paraphenylenediamine but does contain an aniline derivative, also large quantities of magnesium. Correspondence indicates at least five other cases in which patients have developed severe symptoms, such as conjunctivitis and dermatitis, following the use of this product.—Ed.]

GANGRENOUS MECKEL'S DIVERTICULUM PERFORATED
BY A TOMATO PEEL

ROBERT I. HILLER, M.D., AND LOUIS A. BERNHARD, M.D., MILWAUKEE

This case is not presented as propaganda against the eating of tomatoes but merely to emphasize a possible surprise that one may encounter in a case diagnosed as acute appendicitis.

History.—J. L., a white man, aged 41, employed as the supervisor of a warehouse, seen by Dr. Bernhard, Aug. 18, 1932, complained of pain in the abdomen to the right of the umbilicus. The pain had started and remained localized in that spot. The patient's appetite was good and his bowel movements were regular. There had been no nausea or vomiting. Tomatoes had been eaten that morning, and pain had begun toward evening.

He had never been in any accidents and had never undergone an operation. He had had mumps and measles in childhood, and a left inguinal hernia had been present for about twenty years.

The patient's mother had died at the age of 50 of pleurisy. His father was living and well at the age of 71. Three brothers and five sisters were living and well.

He was admitted to St. Luke's Hospital, August 19, where physical examination disclosed: temperature, 100.8 F.; pulse, 108; respirations, 26. His face showed an expression of discomfort. His teeth were in fair condition but pyorrhea was marked; his tongue was thickly coated and halitosis was strongly evident. His throat was clean. No significant conditions were noted in the neck and chest. The heart sounds were of good quality and no murmurs were noted. Rhythm was regular. Abdominal examination disclosed tenderness and some muscle spasm over McBurney's point. A left indirect inguinal hernia was present. The extremities and reflexes presented no abnormalities. The white blood count was 17,600; the coagulation time was three minutes. Urinalysis disclosed an acid reaction, a trace of albumin, a few crystals, and many bacteria. Examination of the urine was otherwise negative.

The preoperative diagnosis was acute appendicitis.

Operation.—Under nitrous oxide and ether anesthesia, the abdomen was opened through a Kammerer incision. Free pus and considerable plastic exudate were immediately encountered. The appendix appeared in the wound and was almost completely obliterated. It was obviously not the cause of the acute inflammatory process present in the right lower abdominal quadrant. Further investigation, however, disclosed an acutely inflamed Meckel's diverticulum lying medial and caudad to the cecum. The area was quickly isolated with gauze sponges and the diverticulum was brought into the wound. It was found to be gangrenous, covered with plastic exudate and perforated at one angle of its dome by a white structure which resembled a toothpick but which later proved to be a tightly rolled piece of tomato skin. The diverticulum was located on the anti-mesenteric border of the ileum. It was clamped transversely and amputated, and the ileum was overscwed with a linen suture. Gas passed freely through the oversewed area, and the lumen of the bowel at this point admitted the index finger without difficulty. Because of the marked infiltration of the ileum at the site of its closure, a loop of number 2 plain catgut was passed through its mesentery and brought out through the incision. A Penrose drain was inserted on each side of the closed bowel, and the abdomen was closed in layers. Hemostasis was complete and the sponge count correct. The patient



Eyelash dye dermatitis.

ten days the margins of both eyelids continued to be red and angry. Removal of the eyelashes with a pair of scissors as close to the margins as possible was followed by marked improvement within forty-eight hours and from then on to complete relief.

COMMENT

The condition was recognized when first observed as a dermatitis with an external precipitating factor. Pointed questioning was required before the patient revealed that she had had her lashes dyed some twelve days previously and that this was her third adventure with eyelash dyeing. The dye used this time, however, was of a different nature than the dye used on the previous two occasions. Sensitization to repeated application of the new dye was therefore excluded. The allergic nature of the condition was indicated by the twelve-day incubation period, between application and reaction. Undoubtedly, multiple sensitization was either present or induced, as indicated by the severe relapse following the use of

stood the operation well, the pulse remaining at about 100 during the entire procedure.

Pathologic examination revealed that the specimen was a gangrenous intestinal diverticulum about 1 inch long and 1 inch wide, perforated by a rolled tomato peel.

Postoperative Course.—Recovery was uneventful. The temperature rose to 101.4 F. on the second postoperative day and declined steadily to normal on the seventh day, when the patient left the hospital. He has been seen several times since his operation and has had no complaints except for occasional discomfort from the inguinal hernia, which was not disturbed during his stay at the hospital.



The excised diverticulum and the rolled tomato peel.

He classified the types according to the extent of communication with the umbilicus as follows: (1) A patent tube may connect the ileum with the outside through the umbilicus; (2) the diverticulum may terminate as a fibrous cord attached to the umbilicus, or (3) no communication with the umbilicus may be present, the diverticulum being attached on either the mesenteric or the antimesenteric side.

Misplacements of gastric mucosa or pancreatic tissue associated with ulceration, hemorrhage or perforation have been reported in this type of diverticulum and are cited by Kaufmann² and Aschoff.³ Hudson and Koplik⁴ found gastric mucosa in 52 per cent of twenty-three cases of Meckel's diverticulum examined pathologically. Twenty-seven of thirty-two cases reported by them showed symptoms referable to the diverticulum, and in 63 per cent of these cases hemorrhage was a prominent symptom. They feel that "the association of hemorrhage from the intestine with other acute abdominal symptoms should suggest Meckel's diverticulum." Fronticelli⁵ has contributed a very lucid explanation of the phenomena of hemorrhage and perforation, which are the chief symptoms suggestive of the presence of an ulcer in a Meckel's diverticulum. The ulcers that occur in the diverticulum are not of the peptic type but more of the gastrojejunal type, in which an acid secreting gastric mucous membrane impinges on an alkaline secreting intestinal mucous membrane, producing corrosion and penetration leading to the symptoms of hemorrhage and perforation.

Intestinal obstruction is a common complication of Meckel's diverticulum. The type of diverticulum that terminates as a fibrous cord attached to the umbilicus is prone to this complication. Finny⁶ reported a rather unusual obstruction produced by a diverticulum knotting itself round the bowel. The free

end of the tube had first passed through the mesentery and then through a loop of itself. The knot tied was tight enough not only to obstruct the bowel but to strangulate the distal end of the diverticulum. According to Fronticelli,⁵ Meckel's diverticulum ranks fourth in the nine causes of invagination.

Meckel's diverticulitis produces symptoms simulating appendicitis. It may be a part of an enteritis or it may be produced by local trauma, such as the presence of foreign bodies as in our case or by compression in a hernial sac. If gangrene occurs, peritonitis quickly follows, because the process is located on a freely moving loop of ileum.

208 East Wisconsin Avenue—836 West Mitchell Street.

COMMENT

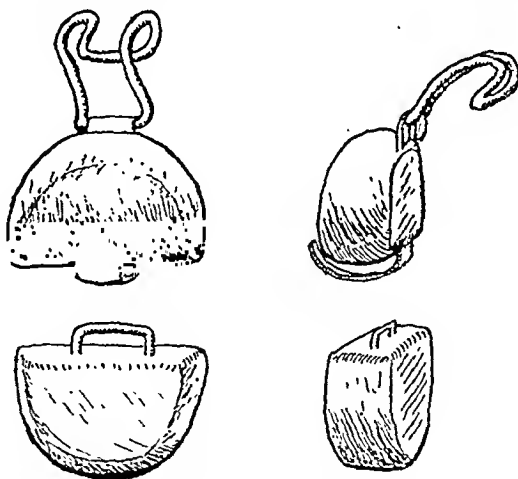
Meckel's diverticulum is a congenital anomaly that represents a rudiment of the omphalomesenteric duct or yolk stalk. In a review of 5,768 autopsies performed on children at the Babies Hospital in the laboratory of Dr. Martha Wollstein, Christie¹ found sixty-three cases of Meckel's diverticulum, an incidence of 1.1 per cent; of these, 74.6 per cent were in males. The distance from the ileocecal valve varied from 6 to 36 inches; the average was 20½ inches in children under 88 weeks.

WEIGHTED RETRACTORS FOR TRACHEOTOMY

CONRAD WESSELHOEFT, M.D., BOSTON
Chief, Haynes Memorial for Contagious Diseases, Massachusetts
Memorial Hospital

During a tracheotomy it is necessary to have retractors held on either side of the wound while the operator dissects down onto the trachea. If the patient is intubated before the operation, the necessity for speed is not so essential as when intubation has not been previously performed. Nevertheless, anything that allows of greater speed and accuracy is desirable. Ordinary retractors held in place by an assistant are apt to be held unevenly. Spreading retractors are unsatisfactory in very small patients, as they tend to become displaced. Furthermore, the thumb and the middle finger of the left hand of the operator are needed as guides in holding the trachea during the dissection.

The instrument here described consists of a pair of weights hung from a heavy silver wire loop. This loop can be easily bent to form an angle suitable for retracting. As soon as the incision is made, the loops of the retractors are inserted into the two edges, and the weights resting on the sides of the neck hold open the wound with equal traction. If the angle of the loop is made sufficiently sharp, these retractors do not slip. In a baby or small child, one weight on each side is



Weighted retractor with second weight, for tracheotomy.

sufficient. In an adult, second weights can be hung on the first ones, thus increasing the traction.

These self-retaining weight retractors enable the assistant to take a more active part in the operation, and they do not in any way interfere with the field or with the operator's left hand. As the wound is deepened, the retractors can be quickly reset. In short, they simplify the operation by doing the usual work of the assistant and permit of more speed and accuracy.

Each retractor consists of a sterling silver wire loop hung on a flat strip of brass. This brass strip is set into a lead weight, coming out at the bottom, where it is again turned to form a hook for the second weight. The weight, together

1. Christie, Amos: Meckel's Diverticulum: A Pathologic Study of Sixty-Three Cases. *Am. J. Dis. Child.* 42: 544 (Sept.) 1931.

2. Kaufmann, Eduard: *Lehrbuch der speziellen pathologischen Anatomie für Studierende und Aerzte*, ed. 7 and 8, Leipzig, Meizger & Wittig 1: 521, 1922.

3. Aschoff, Ludwig: *Pathologische Anatomie*, ed. 7, Jena, Gustav Fischer 2: 775, 1928.

4. Hudson, H. W., Jr., and Koplik, L. H.: Meckel's Diverticulum in Children: A Clinical and Pathologic Study. *New England J. Med.* 206: 827-840 (April 21) 1932.

5. Fronticelli, E.: Pathology of Meckel's Diverticulum, *Policlinico (ser. prat.)* 33: 77-81 (Jan. 18) 1926.

6. Finny, C. M.: Malla: A Case of Obstruction Due to a Meckel's Diverticulum, *Brit. J. Surg.* 15: 329 (Oct.) 1927.

with the brass strip, is heavily copper plated and then chromium plated. The upper weight weighs 168 Gm., and the lower weight weighs 152 Gm.

This instrument was made up for me by Codman and Shurtleff, Inc., makers of surgical instruments, Boston.

315 Marlborough Street.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

SOLUTION COLLOIDAL MERCURY SULPHIDE-HILLE.—Liquor Hydrargyri Sulphidum Colloidal.—Solution Colloidal Mercuric Sulphide.—A colloidal 2 per cent solution of mercuric sulphide in water, stabilized with a hydrolyzed protein substance and preserved with 0.2 per cent of tricresol.

Actions and Uses.—Solution colloidal mercury sulphide-Hille is proposed for intramuscular injection in the treatment of syphilis.

Dosage.—The usual dose is from 2 to 3 cc. administered intramuscularly twice a week for a course of sixteen to twenty injections. With intermittent treatment there should then be a rest period of six or eight weeks. If continuous therapy is being used, of course some other antisyphilitic, for example arsphenamine, might then be employed.

Manufactured by Hille Laboratories, Inc., Chicago. No U. S. patent or trademark.

Solution colloidal mercury sulphide-Hille is black in reflected light and brown in transmitted light. It possesses the odor and taste of tricresol. It has a specific gravity of from 1.0670 to 1.0690.

The solution is neutral to litmus. (Place a drop of the solution over a piece of blue litmus paper and a drop on red litmus paper; after one minute the original color can be detected on the edges of the drop.) To 1 cc. of the original solution add 3 cc. of iodine solution: a clear reddish solution results which within an hour becomes turbid because of the separation of a red precipitate.

To 20 cc. of the solution add 7 Gm. of sodium chloride and boil until the colloid coagulates, filter off the precipitate and cool the solution: the solution remains clear (lead). Transfer about one fourth of the black precipitate to a beaker, add 10 cc. of water, 2 cc. of diluted hydrochloric acid and a small crystal of potassium chlorate, boil until the solution no longer evolves chlorine, filter off the sulphur and add a few drops of stannous chloride: a white precipitate that changes to gray forms. To 5 cc. of the yellowish filtrate add 5 cc. of ammonia water: no color change occurs (copper) and no precipitate forms (bismuth, iron). To 5 cc. of the filtrate add 1 cc. of a 1 per cent solution of tannic acid: a white precipitate forms. To 5 cc. of the filtrate add 2 drops of a 36 per cent solution of acetic acid: a turbidity appears that disappears on the addition of more acetic acid. To 5 cc. of the filtrate add 1 cc. of copper sulphate solution: a slight precipitate forms that is rendered soluble by adding 2 volumes of water; add 1 cc. of normal sodium hydroxide solution: a violet color appears. To 5 cc. of the filtrate add 1 cc. of mercuric chloride solution: no precipitate forms. To 5 cc. of the solution add 5 cc. of diluted hydrochloric acid and a small crystal of potassium chlorate and heat. When the black precipitate has disappeared, filter and boil to a small volume. Add 2 cc. of sulphurous acid and continue the boiling until sulphur dioxide is no longer given off; cool: this solution conforms to the U. S. P. X Gutzeit test for arsenic.

Transfer exactly 5 cc. of the solution to a weighed platinum dish, add sodium sulphide solution (50 Gm. sodium sulphide dissolved to make 100 cc.) until the precipitate just dissolves and then add as much again, electrolyze the solution for six hours using 6 volts, wash with water, alcohol and ether, dry in a desiccator containing sulphuric acid and a beaker containing metallic mercury, weigh: the mercury calculated to mercuric sulphide is not less than 1.94 per cent nor more than 2.06 per cent.

ANTIPNEUMOCOCCUS SERUM (See New and Non-official Remedies, 1933, p. 369).

Parke, Davis & Co., Detroit.

Antipneumococcus Serum (Feltou) Type I.—Prepared by immunizing horses with killed cultures of highly virulent *Diplococcus pneumoniae* isolated from lobar pneumonia. The product is refined and concentrated by the method of precipitation and is tested by three methods: The precipitation test, the Feltou method of standardization by mouse protection test and the National Institute of Health standard test. The finished product contains type II pneumococcus antibodies but not in therapeutically important amounts. It is marketed in packages containing 10,000 and 20,000 units of type I pneumococcus.

Dosage.—From 50,000 to 100,000 units may be given the first twenty-four hours. Following this, the antiserum is given every few hours as indicated by the symptoms.

Committee on Foods

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary.

LARSEN'S GREEN BEANS (STRAINED-UNSEASONED)

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved green beans prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw green beans. No added sugar or salt.

Manufacture.—Freshly harvested succulent refugee variety green beans are snipped, delivered to the factory on the same day, washed, cleaned, sorted by hand to remove any foreign material, again washed, blanched in hot water until soft enough for sieving, and puréed as described for tomatoes (THE JOURNAL, July 1, 1933, p. 35). The puréed beans are admixed with a small amount of water to produce the desired consistency, heated in an enclosed vessel at 82 C. and automatically filled into washed cans, which are sealed and processed for sixty minutes at 116 C.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 93.9 |
| Total solids | 6.1 |
| Ash | 0.5 |
| Salt (NaCl) | 0.53 |
| Fat (ether extract) | 0.2 |
| Protein (N X 6.25) | 1.6 |
| Crude fiber | 0.7 |
| Carbohydrates other than crude fiber (by difference) .. | 3.1 |

Calories.—0.2 per gram; 6 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

OVENCRAFT FLOUR (BLEACHED)

Manufacturer.—The Robinson Milling Company, Salina, Kan.

Description.—Hard winter wheat "standard patent" flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of nitrogen trichloride (one-seventh ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds).

Claims of Manufacturer.—For bread baking.

NONE-SUCH BRAND STERILIZED UNSWEETENED EVAPORATED MILK

Manufacturer.—Dean Milk Company, Chicago, or other manufacturers of accepted evaporated milk.

Distributor.—Durand, McNeil, Horner Company, Chicago.

Description.—Canned unsweetened evaporated milk the same as Dean's Quality Evaporated Milk (THE JOURNAL, Aug. 6, 1932, p. 477).

STAUDT'S REDI-SLICED BREAD

Manufacturer.—Staudt's Bakery, Raleigh, N. C.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from flour, water, sucrose, powdered skim milk, lard, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

**PIXIE STRAINED PRUNES—FLAVORED
WITH LEMON JUICE**

Manufacturer.—The Fruit Belt Preserving Company, East Williamson, N. Y.

Description.—Sieved prunes flavored with lemon juice. No added sugar or salt.

Manufacture.—Dried prunes are washed, sorted, soaked in cold water for ten to twelve hours, pitted, cooked for twenty minutes, sieved, and brought to a desired consistency in an atmosphere of steam. Sufficient lemon juice is added to produce a citric acid content of 0.6. The mixture is heated to 82 C., automatically canned and processed for forty minutes at 100 C.

| Analysis (submitted by manufacturer).— | | per cent |
|--|-------|----------|
| Moisture | ..... | 73.7 |
| Total solids | ..... | 26.3 |
| Ash | ..... | 0.6 |
| Fat (ether extract) | ..... | 0.1 |
| Protein (N \times 6.25) | ..... | 0.9 |
| Crude fiber | ..... | 0.4 |
| Carbohydrates other than crude fiber (by difference) | ..... | 23.7 |
| Titrable acidity as citric acid | ..... | 0.6 |

Calories.—1.0 per gram; 28 per ounce.

Claims of Manufacturer.—The sieved prunes require only warming before serving; recommended for infants, children, convalescents and special diets; prepared by methods for retaining in high degree the natural nutritional values.

**CLAPP'S ORIGINAL WHEATHEART
CEREAL**

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Cooked unstrained mixture of durum semolina and wheat germ. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—Semolina, wheat germ and water are cooked under pressure in a closed Pfaudler glass lined cooker for fifteen minutes. The unstrained cooked mass is filled into glass jars, which are sealed and processed in autoclaves.

| Analysis (submitted by manufacturer).— | | per cent |
|--|-------|----------|
| Moisture | ..... | 86.6 |
| Total solids | ..... | 13.4 |
| Ash | ..... | 0.9 |
| Fat (ether extraction method) | ..... | 0.4 |
| Protein (N \times 6.25) | ..... | 2.1 |
| Crude fiber | ..... | 0.2 |
| Carbohydrates other than crude fiber (by difference) | ..... | 9.8 |

Calories.—0.5 per gram; 14 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

**HAWAIIAN FINEST QUALITY PINEAPPLE
JUICE (UNSWEETENED)**

- (1) HAPPY HOUR, (2) HOMESPUN, (3) ROUNDY'S SUPREME,
(4) RANNEY'S AND (5) SANITARIUM BRANDS

Packer.—Hawaiian Pineapple Company, San Francisco.

Distributor.—1. Campbell Holton Company, Bloomington, Ill.

2. Phillips-Lewis Company, Inc., Richmond, Va.

3. Roundy Peckham and Dexter Company, Milwaukee.

4. The Ranney-Davis Mercantile Company, Arkansas City, Wichita, Kan.

5. The Battle Creek Food Company, Battle Creek, Mich.

Description.—Canned Hawaiian pineapple juice retaining in high degree the natural vitamin content; the same as Dole Hawaiian Finest Quality Pineapple Juice (Unsweetened) (THE JOURNAL, June 3, 1933, p. 1769).

**JELKE GOOD LUCK EVAPORATED MILK
UNSWEETENED, STERILIZED**

Manufacturer.—John F. Jelke Company, Hillsboro, Wis., a subsidiary of the John F. Jelke Company, Chicago.

Description.—Unsweetened, sterilized evaporated milk.

Manufacture.—The raw milk is obtained from healthy cows from farms meeting the company's requirements for sanitation. The herds and farms are regularly inspected by the company's

inspectors. Milk with a higher acidity than 0.13 per cent as lactic acid is rejected.

The procedure of evaporation and canning is the same as for the usual evaporated milk (THE JOURNAL, April 16, 1932, p. 1367).

| Analysis (submitted by manufacturer).— | | per cent |
|--|-------|----------|
| Moisture | ..... | 73.8 |
| Total solids | ..... | 26.2 |
| Ash | ..... | 1.5 |
| Fat (ether extract) | ..... | 7.9 |
| Protein (N \times 6.38) | ..... | 6.8 |
| Lactose (by difference) | ..... | 10.0 |

Calories.—1.4 per gram; 40 per ounce.

Claims of Manufacturer.—See announcement of acceptance for Evaporated Milk Association Educational Advertising (THE JOURNAL, Dec. 19, 1931, p. 1890).

**MARY LOU FLOUR (PHOSPHATE ADDED)
(BLEACHED)**

Manufacturer.—The Robinson Milling Company, Salina, Kan.

Description.—A bleached hard winter wheat "straight" flour containing 0.5 per cent added calcium acid phosphate.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. The flour streams are blended, bleached with a mixture of calcium phosphate and benzoyl peroxide (one-half ounce per 196 pounds) and chlorine (three-fourths ounce per 196 pounds); 0.5 per cent calcium acid phosphate is added.

Claim of Manufacturer.—A "phosphated" flour for biscuit baking in the home.

WHITE HOUSE RICENA

Manufacturer.—Standard Rice Company, Inc., Houston, Texas.

Description.—Granulated scoured rice.

Manufacture.—The larger pieces of broken scoured rice grain such as are obtained in the milling of White House Rice (THE JOURNAL, July 22, 1933, p. 283) are crushed between corrugated iron rolls, are passed through wire-covered reels or other grading devices to separate out the granules of desired size, are heated to 70 C. for a short time or electrically treated to destroy insect life and are packed in wax-paper wrapped cartons.

| Analysis (submitted by manufacturer).— | | per cent |
|--|-------|----------|
| Moisture | ..... | 11.9 |
| Ash | ..... | 0.4 |
| Fat (ether extraction method) | ..... | 0.5 |
| Protein (N \times 5.95) | ..... | 6.2 |
| Crude fiber | ..... | 0.3 |
| Carbohydrates other than crude fiber (by difference) | ..... | 80.7 |

Calories.—3.5 per gram; 100 per ounce.

Claims of Manufacturer.—Intended for use as a hot breakfast cereal and for cooking and baking; contains no added talcum or "glucose." Rice is especially easily digested.

**SILVERCUP 100% WHOLE WHEAT
BREAD SLICED**

Manufacturer.—Gordon Baking Company, Chicago.

Description.—A whole wheat bread prepared by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from whole wheat flour, water, condensed sweetened whole milk, honey, lard, salt, yeast and a yeast food containing calcium acid phosphate, ammonium sulphate, sodium chloride, potassium bromate, potassium iodate and corn starch.

| Analysis (submitted by manufacturer).— | | per cent |
|--|-------|----------|
| Moisture | ..... | 34.3 |
| Ash | ..... | 2.3 |
| Fat (acid hydrolysis method) | ..... | 9.7 |
| Protein (N \times 6.25) | ..... | 10.9 |
| Reducing sugars before inversion as dextrose | ..... | 5.4 |
| Sucrose (copper reduction method) | ..... | trace |
| Crude fiber | ..... | 1.6 |
| Carbohydrates other than crude fiber (by difference) | ..... | 41.2 |

Calories.—3.0 per gram; 85 per ounce.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for whole wheat bread.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO, ILL.

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SATURDAY, JULY 29, 1933

EXPERIMENTAL AGRANULOCYTIC ANGINA

Since the first detailed description¹ of the disease now variously designated as agranulocytic angina, agranulocytosis, malignant neutropenia or granulopenia, more than five hundred acute or chronic cases have been reported. The typical acute attack is usually preceded by two or three days of prodromal symptoms, which generally consist of lassitude, malaise and sore throat. The anginal symptom is occasionally absent. These prodromal symptoms are followed by extreme weakness and almost complete prostration, death usually occurring in from two to three days. The mortality is about 85 per cent. If recovery takes place, a recurrence frequently follows in from one to three months.

The essential diagnostic feature of this disease is neutropenia, often amounting to almost complete absence of granulocytes. The total white cell count may or may not be lowered. The characteristic appearance at necropsy is a "liquefied" condition of the bone marrow. Ulcerative lesions of the mouth, anus or cervix may or may not be present. The other pathologic observations are inconstant, apparently depending on the duration of the disease and the presence or absence of secondary bacterial infections. The whole picture thus suggests a fulminating toxic condition.

Until recently, all attempts to produce a condition resembling this disease in laboratory animals have failed. Arsenicals, benzene and x-rays were found to produce a somewhat similar blood picture, but there is little evidence that these agents play an essential part in most clinical cases. Numerous micro-organisms have been isolated from the blood stream or oral lesions in fulminating cases. Of these, *Bacillus pyocyaneus* and certain saccharomycetes, for example, have been found to produce a generalized leukopenia and destruction of red blood cells in laboratory animals. None of

these organisms, however, would produce a typical agranulocytosis by routine methods of injection. The conclusion has been generally drawn from such data that the causative agent must be a highly specialized bacterial strain, acting only on the granulocytes. A second suggested theory postulates an allergic response of the hypersensitive bone marrow to ordinary infectious agents.

In reviewing the reported experimental and clinical data, Dr. E. W. Dennis² of the Department of Bacteriology, Beirut, Syria, was impressed by the fact that several of the micro-organisms more or less prominently associated with agranulocytosis are capable of producing leukocidins in artificial culture mediums. He was also struck by the fact that previous investigators had studied only the effects of generalized experimental infections with these agents, in spite of the fact that a history of focal infection was elicited from most of the reported cases.

Dr. Dennis, therefore, attempted to study the effects of the suspected micro-organisms when introduced into rabbits under conditions simulating strictly local infections. To do this, parchment capsules were filled with an eighteen hour serum-broth culture of the organisms to be studied, the needle puncture being carefully sealed with celloidin. The sealed capsules were then moistened with 70 per cent alcohol and inserted into the abdominal cavity of rabbits. The symptom complex produced by this method of inoculation simulated agranulocytosis in man.

Of the various micro-organisms thus far studied by him, *Streptococcus viridans* reproduces the fulminating type of the disease, causing acute granulopenia within a few hours, death usually occurring within twenty-four hours. Disintegration of the granulocytes begins in the peripheral blood almost immediately after implantation of the capsule. This action is shown by excessive lobulation and vacuolization of the nuclei, vacuolization and loss of outline of the cytoplasm, and swelling and loss of the pseudo-eosinophilic granules. A less fulminating type of the disease is produced with *Staphylococcus aureus*. In cases in which leakage from the capsules took place or in which there was a secondary infection complicating his test, there was an antagonistic response of the bone marrow, with a transient increase in the circulating granulocytes. Such complications, however, "merely hastened the exhaustion of the bone marrow and shortened the life of the animal."

Dr. Dennis concludes from his studies that "pyogenic bacteria are capable of producing granulocytopenia only when they are restrained from active penetration into the tissues, yet are so situated that their toxic products can be absorbed; otherwise they stimulate the leukopoietic system and produce a leukocytosis. Since [in

1. A historical review is given by Kracke, R. R.: *J. Lab. & Clin. Med.* 17:993 (July) 1932.

2. Dennis, E. W.: *J. Exper. Med.* 57:993 (June) 1933.

the hands of previous experimenters] the injection of filtrates of the same organisms has so consistently failed to induce a depression of the granulocytes, it appears that the constancy of the supply of the toxin is a highly important fact. . . . These conditions are satisfied in a chronic [or encapsulated] focal infection."

HEIGHT-WEIGHT-AGE TABLES FOR CHILDREN

The relationship of weight at given ages and heights to nutrition, and its significance as an index of the general health of the child, have long been of interest to medical investigators. Public health workers have made extensive use of height-weight tables as a screening method to detect at least the most severe grades of undernourishment. The common use of the height-weight tables has so popularized weight that an industry of no mean proportions has developed in the weighing of human beings. It is reported that the largest return on any investment at the Century of Progress Exposition is that of the "guess your weight" scales. The erroneous impression expressed in the current phrase "your weight indicates your health" is evidence of the extent to which this idea has been established with the public. Actually, normal weight does not necessarily mean good health; nor do deviations from the average or mean always indicate poor health.

While much basic work had been done earlier, the first impetus was given to the use of height-weight relationships in 1910 by Wood,¹ who published the tables bearing his name, which with various modifications have been widely used in health teaching and in textbooks and other publications. Four years later, Baldwin² published a review of almost 200 studies of height-weight relationships, and in 1920 appeared Emerson and Manny's³ study of weight and height in relation to malnutrition. Emerson held that the 10 per cent underweight standard commonly employed to distinguish between normal children and those requiring medical attention should be superseded by a 7 per cent underweight criterion, and that a zone rather than a definite line of demarcation should be established. He recognized that, while this zone would exclude on the one hand the definitely undernourished and on the other the manifestly obese, it would include a considerable number who for one reason or another would require individual diagnosis. The use of height and weight tables, however, went on apparently undeterred in numerous school and public health systems.

Also in 1920, Bardeen⁴ published his review of the work of numerous observers with respect not only to height-weight-age relationships, but also to volumetric, surface area, girth, sitting height and other measurements, emphasizing that the height-weight index is altered by physiologic age, by sexual peculiarities of structure, by inherited individual or racial peculiarities and by peculiarities of structure due to habits of living or environment. In 1921, Dublin,⁵ working with children of foreign parentage, warned against the too literal interpretation of an individual child's height-weight-age relationship to group averages. In 1922, Clark, Sydenstricker and Collins⁶ published height-weight tables for children in the southern part of the United States and suggested that such tables would be more useful in that part of the country than the composite tables commonly used in which weights of children representing different racial and environmental backgrounds were all merged in a common average. The same authors⁷ in 1923 pointed out a rough but by no means invariable relationship between underweight and malnutrition and emphasized that underweight might not mean malnutrition nor, on the other hand, overweight always be evidence of good nutrition. Also in 1923 the American Child Health Association published revised tables by Baldwin, Wood and Woodbury.⁸ Clark, Sydenstricker and Collins⁹ found that these new tables classed only 16 per cent of a given group of children as 10 per cent or more underweight, whereas, according to the original Wood tables, 20 per cent would have been so classed.

In 1924, Dublin and Gebhart¹⁰ showed definitely that no great reliance can be placed on a height and weight table as an instrument for identifying the undernourished. In 1929, Franzen¹¹ published a monograph describing the measurements made on groups of children whose height, weight and certain skeletal measurements were taken. He concluded that height and weight comparisons with group averages were not significant and emphasized skeletal measurements and estimates of subcutaneous tissue development. The formulas developed from these studies have been valuable scientific contributions but have not proved

4. Bardeen, C. R.: The Height-Weight Index of Build in Relation to Linear and Volumetric Proportions and Surface Area of the Body During Postnatal Development, Contributions to Embryology 9, No. 46, Carnegie Institute of Washington, 1920.

5. Dublin, L. I.: Height and Weight Standards in Nutrition Work Among Children of Foreign Parentage, read before New York Nutrition Council in March, 1921.

6. Clark, Taliaferro; Sydenstricker, Edgar, and Collins, S. D.: Heights and Weights of School Children, Pub. Health Rep. 37: 1185 (May 19) 1922.

7. Clark, Taliaferro; Sydenstricker, Edgar, and Collins, S. D.: Weight and Height as an Index of Nutrition, Pub. Health Rep. 38: 39 (Jan. 12) 1923.

8. Baldwin, B. T.; Wood, T. D., and Woodbury, R. M.: Weight-Height-Age Tables, New York, American Child Health Association, 1923.

9. Clark, Taliaferro; Sydenstricker, Edgar, and Collins, S. D.: The New Baldwin-Wood Weight-Height-Age Tables as an Index of Nutrition, Pub. Health Rep. 39: 513 (March 14) 1924.

10. Dublin, L. I., and Gebhart, J. C.: Do Height and Weight Tables Identify Undernourished Children? New York Association for Improving the Condition of the Poor, 1924.

11. Franzen, Raymond: Physical Measures of Growth and Nutrition, School Health Research Monographs II, New York, American Child Health Association, 1929.

1. Wood, T. D.: Health Examinations, Ninth Yearbook of the National Society for the Study of Education, University of Chicago Press, 1910, part L, pp. 34-35.

2. Baldwin, B. T.: Physical Growth and Progress (a review of nearly 200 studies), Bull. 10, U. S. Bureau of Education, 1914.

3. Emerson, W. R. P., and Manny, F. A.: Weight and Height in Relation to Malnutrition, Arch. Pediat. 37: 468 (Aug.) 1920.

practicable for everyday use. Recently, Curtis¹² has developed a series of curves by which he proposed to predict growth in terms of percentage of maturity, judged in terms of the individual's own growth curves, not of group averages. The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association¹³ definitely advises teachers weighing and measuring children to interpret heights and weights in terms of growth over a period of time rather than by comparison with an average and has omitted all tables from its report, as has Wood,¹⁴ their original proponent, in a leaflet published by the New York Health Department.

Thus the consideration of height and weight as an index of nutritional health has progressed through a number of interesting phases. Height and weight tables still have definite uses. In the hands of the physician, and associated with a competent physical examination, they are still valuable. They may no longer, however, be accepted as sole measures, or even as satisfactory gross indexes, of the state of nutrition of a given child at a given time. Growth in terms of individual progress, not comparison with averages, is a better index. A good physical examination remains a basic necessity for the diagnosis of malnutrition as of any other disease.

Current Comment

ASPHYXIAL DEATH

In last week's issue of *THE JOURNAL* appeared the first instalment of the published proceedings of the Society for the Prevention of Asphyxial Death. The concluding instalment appears in this issue. This society was organized to focus medical attention more definitely on the importance of asphyxiation as a cause of death, particularly in relationship to carbon monoxide poisoning, drowning, electrical shock, smoke poisoning and acute alcoholism. It is estimated that more than 50,000 lives are lost every year in this way. There has been a tendency in industry and in government to attempt to handle such cases largely by the use of lay teams rendering first aid and practicing muscular and mechanical resuscitation long before any attempt is made to get competent medical advice. Such aid may be of the greatest importance as a measure of first aid, but physicians know that many lives could be saved by medical attention if scientific diagnosis and treatment were made available as promptly as attempts at resuscitation by lay operatives. The first meeting of the Society for the Prevention of Asphyxial Death is of special interest because it calls attention to the numer-

ous aspects of the subject, including not only the statistical and economic points of view but also such highly technical procedures as are concerned in endoscopic examination, treatment with oxygen and carbon dioxide, and the use of such intricate apparatus as the negative pressure cabinet. *THE JOURNAL* has deprecated repeatedly the formation of special societies for every tiny phase of medical investigation and practice; nevertheless, this new organization may serve an especially useful purpose in meeting a trend in medical practice that cannot be met in any other way.

THE STATES' RESPONSIBILITIES IN MEDICAL CARE

In numerous discussions of state medicine which have been published from time to time in various medical periodicals, little cognizance is taken of the extent to which the state has already invaded the field of medical care in various communities. The answer to the question so far as it concerns the state of New York appears in our current issue in the article by Dr. Thomas Parran, Jr.,¹ commissioner of health of New York State. In that state, appropriations for public health now approximate many millions of dollars, including \$20,000,000 annually for mental diseases involving the care of 55,000 patients, and an investment of \$19,000,000 and an annual expenditure of \$3,553,000 for upkeep of tuberculosis sanatoriums, approximately \$2,537,184 for school health services and vast sums for the care of the crippled, the control of venereal diseases, public health, nursing, free dental care, free medical care in the current emergency and similar functions. Fifteen per cent of the population of the state of New York were on the relief rolls in April, 1933. Two thirds of the hospital beds in New York state are owned by the public and supported through taxes. As a result of his survey, Dr. Parran is inclined to the belief that increasingly in the future the state will invade the field of medicine. In the discussion of his paper, two distinguished practitioners deprecated this trend. Dr. W. H. Ross, a former president of the New York State Medical Society, urged a halt on the extent to which intervention by the state is increasing in New York, and Dr. Nathan B. Van Etten indicated the extent to which government interference is tending to demoralize and pauperize both the people and the profession. It is well to have available such a competent statement as that by Dr. Parran concerning the extent of medical practice by the state in New York. The tendency is present and the medical profession will do well to be aware of the trend and to control it when possible. *THE JOURNAL* has emphasized repeatedly the manner in which various bureaus and public officials have been gradually broadening their functions and invading the field of medical practice. It is a natural tendency of bureaus to mushroom out. More functions mean more appropriations. More appropriations mean more employees, more prestige and more power. Such expansion, uncurbed, will inevitably be disastrous not only to medicine but to the state itself.

12. Curtis, S. A.: *The Prediction of Growth*, J. Educ. Research, March, 1933; Growth and Development, read before the seventh health education conference, American Child Health Association, Ann Arbor, Mich., in June, 1933.

13. Health Inspection of School Children, Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, 1933.

14. Wood, T. D.: *Watch Your Child's Growth*, City of New York, Department of Health and Department of Education.

1. Parran, Thomas, Jr.: *Public Medical Care in New York State*, this issue, p. 342.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

- August 1. Swimming and Common Sense.
- August 3. The Will to Win.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- August 5. Head Noises.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Single Dose of Toxoid Approved.—The use of one dose of precipitated toxoid for diphtheria immunization as a routine procedure to be employed by health officers and physicians of the state was recently approved by the state department of health.

Society News.—The southeastern division of the Alabama State Medical Society was addressed in Enterprise, July 11, among others, by Dr. Walter A. Lewis on "Interrelation of the Cardiac, Arterial and Renal Systems," and Dr. Luther L. Hill, Jr., Montgomery, "Epigastric Hernia."

CALIFORNIA

Motor Vehicle Accidents.—In 1932, accidental deaths in California in which motor vehicles were involved totaled 2,347. Of these, 823 deaths occurred in collisions of motor vehicles with pedestrians; 658 deaths in collisions between motor vehicles; collisions with railroad trains took 77 lives; electric cars, 58; bicycles, 31; horse-drawn vehicles, 3, and with fixed objects, 129. The greatest number of these deaths occurred among persons between the ages of 15 and 24. Most of the persons who lost their lives in collisions of motor vehicles with pedestrians were more than 65 years of age. Next in the causes of accidental deaths were falls in the home; drowning occupied third place.

Promotions at University of California.—The following promotions of physicians have recently been announced at the University of California Medical School, San Francisco:

- Edwin L. Bruck to associate clinical professor of medicine.
- Ernest S. DuBray to associate clinical professor of medicine.
- Mark L. Gerstle, Jr., to assistant clinical professor of neurology.
- Thomas H. McGavack to assistant clinical professor of homeopathic materia medica.
- Howard W. Fleming to associate clinical professor of surgery.
- Alson R. Kilgore to associate clinical professor of surgery.
- Cyril L. Callander to associate clinical professor of surgery and topographical anatomy.
- Frederick S. Foote to assistant clinical professor of surgery.
- Stanley H. Mentzer to assistant clinical professor of surgery.
- Clark M. Johnson to assistant clinical professor of urology.
- Saxton T. Pope to instructor in medicine.
- Francis J. Rochex to instructor in medicine.
- Charles T. Hayden to instructor in obstetrics and gynecology.
- Leon Goldman to instructor in surgery.

Leaves of absence have been granted the following physicians for the academic year 1933-1934:

- John H. Woolsey, associate clinical professor of surgery.
- Sanford V. Larkey, librarian of the medical school library and assistant professor of medical history and bibliography.
- Lewis S. Mace, assistant clinical professor of medicine.

CONNECTICUT

Personal.—Dr. Harry Martin Zimmerman, assistant professor of pathology, Yale University School of Medicine, has been promoted to a professorship.

Society News.—Dr. Howard Fox, New York, addressed the Danbury Medical Society, June 1, on diagnosis and treatment of common skin diseases.—Dr. Samuel M. Baum, New York, gave an illustrated lecture on "Interstitial Implantation of Radium in the Treatment of Malignancies" before the staff of Mount Sinai Hospital, Hartford, June 16.

DISTRICT OF COLUMBIA

Personal.—Dr. Edward Francis of the National Institute of Health, Washington, was given the honorary degree of doctor of science by Ohio State University at its commencement, June 12.—Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, recently received the honorary degree of doctor of laws from Yale University.

Portraits Presented.—Portraits of three army medical officers were presented to the Army Medical Center at Walter Reed Hospital, May 30, in a Memorial Day ceremony, newspapers reported. Presentation of a portrait of Major Gen. William C. Gorgas was made by Surg. Gen. Robert U. Patterson in behalf of officers and nurses at the center; one of Brig. Gen. James M. Kennedy by Gen. Carl R. Darnall, retired, in behalf of friends, and one of Col. John Van Rensselaer Hoff by Major Gen. Merritte W. Ireland, in behalf of Mrs. Hoff. Major Gen. Albert E. Truby, commander of the medical center, received the paintings, which are the work of Bernard Godwin.

FLORIDA

Personal.—Dr. and Mrs. Joseph H. Branham, Okahumpka, celebrated their golden wedding anniversary, recently.—New members of the state board of health include Drs. Harry D. Johnson, Daytona Beach, and Leland H. Dame, Inverness.

New Quarantine Station.—Acceptance by the U. S. government of 35 acres of land at Gadsden Point from the Atlantic Coast Line Railroad, for a new quarantine station, was announced in the Tampa *Morning Tribune*, June 8. The greatest asset in moving the station from Mullet Key to Gadsden Point, the report stated, is the probability that a marine hospital may be erected there later.

Society News.—Dr. Gerard Raap, Miami, addressed the Dade County Medical Society, June 2, on "Abnormalities of the Vertebral Bodies."—A symposium on pediatrics was presented before the Duval County Medical Society, June 6, by Drs. Thomas E. Buckman, William E. Ross and Luther W. Holloway, all of Jacksonville.—The Sarasota and Manatee county medical societies held a joint meeting, May 16, in Sarasota, with Drs. Emory W. Bitzer, Tampa, and Jack Halton, Sarasota, as speakers, on "Treatment of Hypertension" and "Treatment of Rectal Strictures," respectively.

ILLINOIS

Society News.—Dr. Archie D. Carr, St. Louis, addressed the Madison County Medical Society, July 7, on diseases of the brain.—Dr. Philip H. Kreuscher, Chicago, conducted a crippled children's clinic at Sterling, July 11, and one at Monmouth, July 12, under the auspices of the Whiteside and Warren county medical societies.—Dr. Paul M. Hardinger, Mattoon, spoke on medical and surgical treatment of cataract before the Coles-Cumberland Medical Society, July 6.—Dr. Ralph A. Goodner, Nashville, has been appointed managing superintendent of the Anna State Hospital; he occupied the same position in 1913.

Epidemic Diseases Present.—Typhoid fever and infantile paralysis are of great concern at present, according to the *Illinois Health Messenger*. Cases during June were widely scattered, one or two in a locality, indicating several sources of infection. Infantile paralysis increased sharply with six cases in the last two weeks against a maximum of five in any full month prior to June. Rabies has been unusually prevalent among dogs. During June about twenty animal heads, mostly of dogs, were examined weekly in the laboratories of the state department of health and positive evidence of rabies was found in more than one third. From ten to thirty cases a week of meningitis have been reported. At the end of the twenty-fifth week of this year, 430 cases had been reported against 176 for that period in 1932. The highest previous record in any whole year was 579 cases in 1929, it was reported.

Chicago

Personal.—Dr. William F. Dickson was honored at a dinner, June 29, and presented with a desk set by the staff of the Woodlawn Hospital, on the occasion of his completion of fifty years in the practice of medicine. Dr. Rollo K. Packard, president of the hospital, presided.

Society News.—Dr. Eben J. Carey, professor of anatomy, Marquette University School of Medicine, Milwaukee, lectured in the Italian Pavilion of the Century of Progress, July 9, on "The Italian Fathers of Basic Medical Science." This lecture was one of a series of cultural lectures on Italian achievements in science, fine arts, literature and politics, being presented under the supervision of Prof. Enrico Bompiani of the University of Rome. Dr. Carey is in charge of medical exhibits for the exposition.

Changes at University of Chicago.—Recent promotions in the Division of Biological Sciences, University of Chicago, include the following:

Dr. Percival Bailey, a concurrent appointment as professor of neurology in the department of medicine.

Dr. William Bloom, associate professor of anatomy.

Dr. Alexander Brunschwig, assistant professor of surgery and also assistant professor of roentgenology.

Dr. Paul C. Bucy, assistant professor of neurosurgery.

Dr. Vernon R. DeYoung, assistant in pediatrics.

Dr. Charles B. Huggins, associate professor of surgery, effective October 1.

Dr. Hülger P. Jenkins, assistant professor of surgery.

Dr. John R. Lindsay, associate professor of otolaryngology.

Dr. Henry B. Perlman, instructor in surgery.

Dr. Gordon H. Scott, assistant professor of otolaryngology.

Dr. John T. Stough, instructor in ophthalmology.

Dr. Theodore E. Walsh, assistant professor of otolaryngology.

Paul Alfred Weiss, Ph.D., has been appointed assistant professor to succeed Benjamin H. Willier in the department of zoology. Dr. Willier has accepted an appointment as head of the department of biology at the University of Rochester, his resignation from the University of Chicago becoming effective October 1. He has been associated with the school since 1920. Dr. Weiss for the last two years has been Sterling research fellow in zoology and anatomy at Yale University.

INDIANA

Society News.—Dr. Pierce MacKenzie, Evansville, talked on "Preventive Measures and Management of Eclampsia" before the Gibson County Medical Society at Princeton, July 10.—The Owen County Medical Society was addressed in Spencer, June 16, by Dr. Frank M. Gastineau, Indianapolis, on "Recent Developments in the Treatment of Skin Diseases."

Personal.—Dr. James H. Crowder has been appointed health officer of Sullivan County, succeeding the late Dr. James H. Neff.—Dr. William B. Hunt, Terre Haute, has resigned as health officer of Vigo County on account of ill health, it is reported, and Dr. Frank G. McCarthy has been appointed to succeed him.—Hanover College conferred the degree of doctor of science on Dr. William N. Wishard, Indianapolis, at its one hundredth commencement, June 6.—Dr. Horace M. Evans, Valparaiso, has been made a member of the new state industrial board, newspapers report.—Dr. L. Doyte Holliday, Fairmount, has been appointed health officer of Grant County, succeeding the late Dr. Otis W. McQuown.

Program for Child Health.—Plans of the state department of child health and maternal welfare, which is now under the supervision of the University of Indiana School of Medicine, Indianapolis, have been announced. Dr. Oscar N. Torian, professor of pediatrics at the university, as chairman of child health on the advisory committee recently appointed (*THE JOURNAL*, July 8, p. 147), has appointed a chairman for each medical district in the state to cooperate in the promotion of child health. Two measures already approved in the program of education are graduate teaching and lectures to child health organizations. Committees under the jurisdiction of Dr. Torian will study, develop plans and make recommendations for the following divisions of work: graduate teaching, immunization, the preschool child, the school child, child health and welfare organizations, and tuberculosis. All plans must be submitted to the university committee for approval. Active programs for the division of maternal welfare, of which Dr. Arthur M. Mendenhall is chairman, and the dental division are in process of formation.

IOWA

Personal.—Dr. Cassius L. Campbell, Atlantic, was recently granted a life membership in the Iowa State Medical Society; he will complete fifty years in the practice of medicine in Cass County this year.—Dr. Harry M. Bradley has been appointed health officer of Independence, succeeding Dr. Delivan M. Fuiks, who resigned and left for Fort Des Moines as a medical officer in the reforestation camps.

Tribute to Veteran Physicians.—Drs. Augustus F. Walter and Herman J. von Lackum, said to be the two oldest practicing physicians in Tama County, were feted at Gladbrook, June 9, by members of the county medical society, their wives

and guests, including officials of the state medical society. Dr. Walter has practiced medicine at Gladbrook for fifty-three years, and Dr. von Lackum in Dysart for forty-seven years. Dr. Arthur A. Pace, Toledo, presented gifts to the physicians on behalf of the society.

KANSAS

Society News.—The Bourbon County Medical Society was addressed in Fort Scott, June 19, by Drs. Lawrence P. Engel and Ferdinand C. Helwig, Kansas City, Mo., on "Diagnosis and Treatment of Tumors of the Breast" and "Pathology of Tumors of the Breast," respectively.—Dr. Clarence B. Francisco, Kansas City, addressed the June meeting of the Johnson County Medical Society on "Fractures of the Pelvis."—A paper on "Blood Platelets" was presented before the Lyon County Medical Society by Dr. Albert Beam, Americus, June 6.—Speakers before the Southeast Kansas Medical Society, in Coffeyville, recently, were Drs. Paul M. Krall and Clifford C. Nesselrode, both of Kansas City, on endocrines and cancer, respectively.

MAINE

State Medical Election.—At the annual meeting of the Maine Medical Association in Poland Spring, June 27, Dr. Warren E. Kershner, Bath, was installed as president, and Dr. Edwin W. Gehring, Portland, was named president-elect. Miss Rebekah Gardner, Portland, was elected secretary.

MASSACHUSETTS

Worcester Campaigns Against Diphtheria.—June 26 marked the opening in Worcester of a campaign against diphtheria, to continue until August 22. Immunization clinics will form a part of the program, which will be carried on in an effort to lower the mortality from the disease.

Personal.—Yale University recently conferred the honorary degree of master of science on Dr. William Bosworth Castle, assistant professor of medicine, Harvard University Medical School, Boston.—Tufts College conferred the degree of doctor of science on Dr. Louis E. Phaneuf, professor of gynecology at the medical school of the college, June 19.

University News.—At the twenty-fifth anniversary of the graduation of the 1908 class of Tufts College Medical School, June 21, Dr. Seth F. Arnold, Belmont, who was toastmaster at the first banquet, again officiated in this capacity. Speakers were Drs. Albert Warren Stearns, dean of the school, and Timothy Leary, medical examiner of Suffolk County and formerly professor of pathology of the institution.

MICHIGAN

Report on Survey of Medical Agencies.—The house of delegates of the Michigan State Medical Society held a special meeting in Lansing, July 11, to consider the report of the special committee which made a survey of medical services and health agencies. The report was received by the house of delegates and a number of the recommendations were approved. The house of delegates did not approve the principle of health insurance but is continuing to direct further study of this problem. The survey committee was discharged, a permanent committee on medical economics was appointed to continue the work of the former, and the appointment of local committees by component societies to work with the state committee was approved. The committee on medical economics was directed to study further the plan of insurance and submit a report at the annual meeting of the society in Grand Rapids, September 11. Health insurance is defined in the report "simply, as a project to equalize the burden of costs arising through illness. It attempts to level this burden by attaching a definite meaning to average costs so that such averages will constitute the exact costs to a family or individual rather than conceal extremes of high or low costs." Health insurance, according to the survey committee, makes possible a wider distribution of medical service and at the same time offers possibilities for the reduction of indigence. Other recommendations of the committee concerned the care of indigents, subsidized medical service, public health administration and the University of Michigan Hospital. In its discussion of the medical care of indigents, the report recommended, among other things, that this problem be undertaken as a joint responsibility by the community and the medical profession, the costs to be met through contribution of funds by the former and a partial contribution of services by the latter. Subsidized medical service was defined in the report as the provision, through national, state or local funds, of reasonably adequate medical care for residents in sparsely settled areas and reasonably adequate incomes and facilities for medical personnel. Intending to place the health department in a position to correlate all medical activities of a public nature in

the county, the committee recommended the establishment of the county as the basic unit of public health administration with financial assistance from national or state funds. A further recommendation relating to the problem of public health was that the committee on medical economics and the state health department should institute a study to determine whether local needs would best be met by single county health departments or by consolidations of two or more counties for the support of a district health unit. The survey committee recommended that the University Hospital adopt a policy which will lead, ultimately, to a restriction of the activities of the hospital to those efforts directed toward medical education. To effect this policy, the appointment of a committee by the university to act with the committee on medical economics of the state society was urged. Recommendations affecting group practice were not made, as the committee felt that it had insufficient data on which to base a judgment and also that at this time it is secondary to the problems already presented. It agrees, however, that while a grouping of certain of the more or less mechanical adjuncts to medical care is reasonable, any arbitrary recommendations for the grouping of personalities can serve no good purpose.

The survey was conducted by a committee appointed following the adoption of a resolution by the house of delegates in Pontiac in September, 1931. Members included Drs. W. H. Marshall, Flint, chairman; F. A. Baker, Pontiac; L. G. Christian, Lansing; B. U. Estabrook, Detroit; C. S. Gorsline, Battle Creek, and F. C. Warnshuis, secretary, ex officio, Grand Rapids. After three months a preliminary report was submitted at a special meeting of the house of delegates, Jan. 27, 1932. As it was realized at that time that the complexity of the subject was too great for such a brief analysis, the committee was made permanent and Nathan Sinai, D.P.H., of the division of hygiene and public health, University of Michigan, was engaged as director of the study. Beginning with the evolution of medical care, the study took up the following problems: geographic features of Michigan; population, income and costs of living; illness: its incidence, care and costs; medical services received and needed; physicians: distribution and practice; physicians: income; the University of Michigan Hospital and public health. In addition, miscellaneous studies were made, among other things, on free and part pay clinics in Detroit, the cancer problem, laboratories, medical care of Negroes and tuberculosis.

MINNESOTA

Personal.—Dr. William J. Mayo, Rochester, and Guy Stanton Ford, LL.D., dean of the graduate school, University of Minnesota, were honored by testimonial awards by the Minnesota chapter of Sigma Xi at the annual dinner, June 7. Samuel C. Lind, Ph.D., Minneapolis, was elected president of the chapter.

MISSISSIPPI

Society News.—At a meeting of the Central Medical Society in Jackson, June 6, speakers included Drs. Leonard Hart, Meridian, on cardiac irregularities and their treatment; Little B. Neal, Jackson, cardiopasm, and Willie H. Watson, Pelahatchie, medical organization. —Dr. Doctor A. Pettit presented roentgenograms demonstrating unique fractures of the upper extremities before the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, June 13. Drs. Hiram C. Sheffield, Jackson, and William Pierre Robert, Vicksburg, talked on dementia praecox and prevention of diphtheria in children, respectively. —The Northeast Mississippi Thirteen Counties Medical Society was addressed in Greenwood Springs, June 20, by Drs. Ira P. Burdine, Jr., Jackson, on "Spinal Puncture"; Albert D. Hurt, Corinth, "Chronic Endocervicitis"; James B. McElroy, Memphis, Tenn., "Recent Developments in the Treatment of Malaria," and Thomas F. Wolford, Columbus, "Agranulocytic Angina." —Among speakers before the South Mississippi Medical Society in Hattiesburg, June 8, were Drs. Eugene B. Vickery and Edmund Denegre Martin, both of New Orleans, on "Problem of Vesiculitis" and "Treatment of Fracture of the Femur by New and Simple Devices," respectively.

MISSOURI

Typhoid Outbreaks.—The drinking of polluted water at a church picnic near St. Louis recently caused nine cases of typhoid, with two deaths. Health officials stated that the water used, which was taken from a quarry, was mistaken for spring water, but was in reality a stream formed by surface water which accumulated during the heavy rains of May. Six members of an orphans' home, who attended a later picnic on the same grounds, also contracted the disease. Impure water in the same region recently caused eight cases of the

disease among road workers, with one death. It was also stated that about twelve other members of the crew were ill with similar symptoms. The water taken by the men and the picnickers could not be found by the investigators for the county health department, and it was assumed that it had evaporated before its dangers were known, the report stated.

NEBRASKA

Personal.—Dr. Carl W. Sherfey, Lincoln, has been appointed head of the Nebraska Soldiers' and Sailors' Home, Grand Island, succeeding Dr. John M. Triplett. —Dr. Hiram Winnett Orr, Lincoln, was a speaker at the annual meeting of the British Medical Association in Dublin, Ireland, July 26, on "Treatment of Osteomyelitis and Compound Fractures."

Omaha Clinical Conference.—The first assembly sponsored by the newly organized Omaha Mid-West Clinical Society will be held October 30-November 3, with headquarters at the Hotel Paxton. Guests who will conduct clinics and present papers include Drs. Dean Lewis, Baltimore, President, American Medical Association; Richard H. Jaffe, Kellogg Speed, Julius H. Hess, James T. Case, James B. Herrick, Lewis J. Pollock, all of Chicago; Hugo Ehrenfest, St. Louis; Wells P. Eagleton, Newark, N. J.; Edward H. Skinner, Kansas City, Mo.; Fred D. Weidman and Joseph C. Birdsall, Philadelphia. There will be general assemblies each morning, followed by detailed lectures by Omaha physicians, afternoon clinics in Omaha hospitals and evening programs of scientific addresses. Dr. Adolph Sachs is president of the society and Dr. Joseph D. McCarthy, secretary.

NEW JERSEY

Personal.—Dr. William H. Areson, Upper Montclair, was guest of honor at a dinner given by physicians of Montclair, June 16, at the Montclair Golf Club. Dr. Areson has been associated with the department of health of Montclair for a number of years, and director of the department since 1923. Last year he was president of the Essex County Medical Society and has taken active part in civic affairs in Montclair for many years.

NEW MEXICO

Personal.—Dr. George W. Stephens, Phoenix, Ariz., has been appointed superintendent of the New Mexico Home and Training School for Mental Defectives, Los Lunas, succeeding Dr. Merton O. Blakeslee. —Dr. Robert O. Brown, Santa Fe, has been elected president of the New Mexico Tuberculosis Association.

NEW YORK

Standards for Pathologists Regulated by State.—Regulations establishing qualifications of surgical pathologists similar to those which have been required of bacteriologists for many years have recently been adopted by the Public Health Council. The law now provides that the pathologist shall have an adequate knowledge of pathology and subsequent to graduation at least four years' training and experience in pathologic work, approved by the Public Health Council, of which at least one year shall have been devoted to training and experience in the diagnosis of neoplastic disease. Applicants for approval must demonstrate their efficiency by examining sections of tissue from a series of representative lesions. The tissues used have been selected by a number of eminent pathologists in the state and only those are used on which the division of laboratories and research and the State Institute for Malignant Disease have agreed as suitable for the purpose and as to diagnosis. A certificate is issued only after conference and agreement that the applicant meets minimum standards of efficiency.

New York City

Hospital News.—The medical staff of Bronx Hospital gave a dinner, June 19, in honor of Mr. Alexander Selkin, president of the hospital, in celebration of the first anniversary of the opening of the hospital's new building. More than 8,000 patients have been treated during the year, an average occupancy of 75 per cent.

Personal.—Dr. Haven Emerson, professor of public health practice, DeLamar Institute of Public Health, Columbia University College of Physicians and Surgeons, was recently elected a corresponding member of the Academy of Athens. —Dr. Willis E. Merriman, Jr., assistant physician at Hudson River State Hospital, Poughkeepsie, has been appointed superintendent of Manhattan State Hospital, Ward's Island, to succeed Dr. Isaac J. Furman, who died in May.

Kings County Medical Library.—More readers used the library of the Kings County Medical Society during 1932 than

in any other year, according to the annual report of the librarian. The number of readers was 12,538, an increase of 1,948 over 1931; the number of books consulted was 50,164, an increase of more than 11,000 over the previous year; and the number of books taken out for home use also increased 43 per cent. The society receives regularly 1,509 current serial publications, 890 of which are in English and 619 in twenty-three other languages. The library acquired 745 new books and 911 volumes of periodical publications by subscription or purchase of back files. A special exhibit during the year placed on display the writings of some of the contemporaries of George Washington, including publications by John Jones, John Morgan, Samuel Bard, Benjamin Rush and William Currie, as part of the celebration of the Washington Bicentennial. A set of fluorescent screens for reproduction of printed matter was added to the library's equipment.

NORTH CAROLINA

Personal.—Dr. John P. Hunter has been elected mayor of Cary.—Dr. William P. Richardson, Winston-Salem, has been elected health officer of Richmond County to succeed Dr. Crete N. Sisk, Rockingham.

University News.—Members of the staff of Duke Hospital, Durham, presented a symposium on gastro-intestinal diseases at a meeting of the Durham-Orange County Medical Society at the hospital in May. Dr. Arthur Steindler, Iowa City, Iowa, conducted an orthopedic clinic at the hospital and Dr. Charles R. Stockard, New York, lectured on "Peculiar Form and Type in Man and Animals," recently.

OHIO

Changes at Western Reserve.—The following promotions in the faculty of the Western Reserve University School of Medicine have recently been announced, among others:

Dr. William B. Chamberlin, to clinical professor of otolaryngology.
Dr. William H. Weir, to clinical professor of gynecology.
Dr. Claude S. Beck, to associate professor of surgery.
Dr. Alan R. Moritz, to associate professor of pathology.
Dr. James D. Pilcher, to associate professor of pediatrics.
Dr. John A. Toomey, to associate professor of pediatrics.
Dr. Frederick C. Herrick, to associate clinical professor of surgery.
Dr. William R. Barney, to assistant clinical professor of obstetrics.
Dr. Argyll J. Beans, to assistant clinical professor of medicine.
Dr. John J. Dickenson, to assistant clinical professor of surgery.
Dr. Harold Fell, to assistant clinical professor of medicine.
Dr. Hagop G. Miskjian, to assistant clinical professor of dermatology and syphilology.
Dr. Joseph T. Smith, Jr., to assistant clinical professor of obstetrics.

OKLAHOMA

Personal.—Dr. John B. Smith, superintendent of the University of Oklahoma Hospital, Oklahoma City, since Aug. 15, 1931, retired July 1, because of ill health. Dr. Cecil Bryan of the staff of the state health department has been appointed to succeed him.—Col. Orville D. Wescott has been made superintendent of the Veterans' Administration Hospital at Muskogee, succeeding Col. Louis H. Webb, who has been transferred to the Veterans' Administration Hospital at Legion, Texas.

Society News.—Dr. Peter T. Bohan, Kansas City, Mo., addressed the Garfield County Medical Society, June 15, on "Use of Drugs in Heart Failure."—Dr. Charles P. Bondurant, Oklahoma City, addressed the Canadian County Medical Society, June 4, in El Reno, on "Diseases of the Skin Commonly Seen in General Practice."—Dr. Sylvester N. Mayberry, Enid, among others, presented a paper on subphrenic abscess before the Woods-Alfalfa County Medical Society at its May meeting in Alva.

New Organization of State Board.—Dr. Lewis E. Emanuel, Chickasha, has been elected president of the Board of Medical Examiners of the State of Oklahoma and Dr. James M. Byrum, Shawnee, reelected secretary for four years. New members are Drs. William V. Batson, Marietta; Jesse R. Barry, Picher, and Orion C. Standifer, Elk City. The board now requires candidates for licenses to have a certificate that they have served an internship in an approved hospital before the license is issued.

PENNSYLVANIA

Society News.—Dr. Olin West, Chicago, Secretary and General Manager, American Medical Association, addressed the Third Councilor District of the Medical Society of the State of Pennsylvania in Allentown, June 28, on medical economics.—Dr. Sydney J. Hawley addressed the Montour County Medical Society at a meeting at Danville State Hospital, June 23, on roentgenology.—Dr. George W. Crile, Cleveland, will address the annual meeting of the Lehigh Valley Medical Asso-

ciation at Pocono Manor, July 31, on "The Genesis and Treatment of Cancer." Dr. Jonathan M. Wainwright, Scranton, will speak on "Postgraduate Opportunities in Small Hospitals."

District Society Meeting.—The Seventh Councilor District of the Medical Society of the State of Pennsylvania held its annual meeting in Williamsport, July 14. Dr. Harlow Brooks, New York, addressed the meeting on rheumatic fever; Dr. James D. Stark, Erie, discussed the Erie County plan for care of the indigent and Dr. John P. Harley, Williamsport, the Lycoming County plan. Testimonials were presented to the following members of the district society who have been in practice fifty years or more:

| | |
|--------------------------------|-----------------------------------|
| Joseph W. Albright, Muncy | John A. Klump, Williamsport |
| Elwin H. Ashcraft, Coudersport | William G. Marsh, Watsontown |
| John M. Dumm, Mackeyville | James R. Rankin, Muncy |
| Edward Everett, Dushore | Michael M. Rankin, Ridgway |
| Charles L. Fullmer, Renovo | William J. Shoemaker, Lock Haven |
| Luther M. Holloway, Salona | Charles W. Youngman, Williamsport |
| Ward L. King, Muncy | |

Drs. Charles Falkowsky, Jr., Scranton, president of the state society; Donald Guthrie, Sayre, president-elect, and William H. Mayer, Pittsburgh, chairman of the committee on public relations, also made short addresses.

TENNESSEE

Personal.—Dr. Andrew R. Bliss, Jr., Memphis, has resigned as chief of the division of pharmacology, University of Tennessee School of Medicine, effective August 15. He will take charge of new research laboratories of the William A. Webster Company, manufacturers of drugs. Dr. Bliss has been associated with the university for ten years.

TEXAS

Fifty Years in Practice.—Dr. Edward Randall, emeritus professor of therapeutics at the University of Texas School of Medicine, observed the fiftieth anniversary of his graduation from the University of Pennsylvania School of Medicine in June. For thirty-seven years Dr. Randall occupied the professorship, retiring in 1929 to be succeeded by his son, Dr. Edward Randall, Jr. He has been president of the board of managers of John Sealy Hospital for twenty-five years and in 1929 was appointed a member of the board of regents of the university. Special tributes to Dr. Randall on his anniversary were received from his associates in the university and the city and from medical leaders in other parts of the United States.

Health at El Paso.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended July 15, indicate that the highest mortality rate (22) appears for El Paso, and the rate for the group of cities as a whole, 9.6. The mortality rate for El Paso for the corresponding week of 1932 was 10.8 and for the group of cities, 10.1. The annual rate for eighty-five cities for the twenty-eight weeks of 1933 was 11.4, as against a rate of 11.8 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Society News.—The one hundred and fifth semiannual meeting of the North Texas District Medical Society was held in Greenville, June 5-6. The program included the following symposiums:

Acute Surgical Conditions of the Upper Part of the Abdomen, Drs. William Lee Hudson, Dallas, and Rufus C. Whiddon, Gainesville.
Acute Surgical Conditions of the Lower Part of the Abdomen, Drs. Benjamin F. Largent, McKinney, and Charles W. Flynn, Dallas.
Nonsurgical Abdominal Conditions, Drs. Robert B. Giles and Glenn D. Carlson, Dallas; Corwin L. Maxwell, Myra, and Martin L. Wilbanks, Greenville.
Heart Conditions, Drs. Benjamin J. Berger and Merritt B. Whitten, Dallas, and Coble D. Strother, Sherman.

Among other speakers were Drs. William B. Carrell, Dallas, on osteomyelitis; George R. Enloe, Fort Worth, acute infections of the hand, and George V. Brindley, Temple, acute infections of the face.

WASHINGTON

Protective Measures Against Rabies.—Inoculation of all dogs in Pierce County against rabies was ordered by the county authorities, June 27, as a measure of preventing the spread of the disease, which has been prevalent in the county for several months. About thirty persons were reported to have been bitten by dogs and all had received the Pasteur treatment. A ninety day quarantine on dogs was imposed in May and a state quarantine went into effect, June 1.

WEST VIRGINIA

Society News.—A symposium on pediatrics was presented before the Cabell County Medical Society, Huntington, June 8, by Drs. Will D. Hereford, William B. Hunter, George M. Lyon and Ray M. Sloan. The Monongalia County Medical Society was host to the medical societies of Marion and Harrison counties, June 6, in Morgantown. Drs. Roy R. Snowden and Holland H. Donaldson, Pittsburgh, conducted clinics and in the evening presented papers on peptic ulcer. Dr. William V. Wilkerson, Montgomery, presented a paper on duodenal ulcer before the Fayette County Medical Society, Oak Hill, June 13.

WISCONSIN

Personal.—Dr. Hjørleifur T. Kristjanson, Milwaukee, was elected president of the Diplomates of the National Board of Medical Examiners at their annual meeting in Milwaukee, June 16. Physicians and dentists of Waupun recently gave a dinner in honor of Dr. Wallace P. Smith, celebrating his fortieth anniversary of practice in the town and his graduation from medical school. The staff of St. Mary's Hospital, Superior, gave a dinner in honor of Dr. Thomas J. O'Leary, June 26, celebrating his election as president-elect of the State Medical Society of Wisconsin.

Society News.—Speakers at the June meeting of the Barron-Washburn-Sawyer-Burnett Counties Medical Society at Rice Lake were Drs. Walter G. Sexton, on "Resection of the Prostate"; Karl H. Doege, "Purpura Hemorrhagica" and Paul F. Doege, "Cancer of the Cervix." All are from Marshfield. Dr. Forrester Raine, Milwaukee, addressed the Fond du Lac County Medical Society, May 31, on surgery in tuberculosis. Dr. Chester C. Schneider, Milwaukee, made an address on "Modern Management of Fractures" before the Jefferson County Medical Society, Lake Mills, June 8. Dr. Russell A. Oldfield, Eagle River, addressed the Oneida-Vilas County Medical Society, Rhinelander, June 1, on Dupuytren's contraction. Dr. Edward F. Mielke, Appleton, and Mr. B. E. Kuechle, an insurance man of Wausau, discussed silicosis at the last spring meeting of the Outagamie County Medical Society, June 1. The Milwaukee County Medical Society will conduct its fourth annual diphtheria prevention campaign during August. Clinics for those unable to pay will be established in hospitals.

GENERAL

Examinations in Otolaryngology.—Thirty-nine candidates were successful in the examinations conducted by the American Board of Otolaryngology in Milwaukee, June 12. Nine were conditioned or failed. The next examination will be held in Boston, September 16, preceding the meeting of the American Academy of Ophthalmology and Otolaryngology.

Society News.—Dr. Robert M. Howard, Oklahoma City, was installed as president of the American Association for the Study of Goiter at its recent annual meeting; Dr. Allen Graham, Cleveland, was named president-elect, and Dr. Julius R. Yung, Terre Haute, reelected secretary. The next annual session will be held at Cleveland. At the recent annual meeting of the American Dermatological Association, Dr. Harold N. Cole, Cleveland, was made president, and Dr. William H. Guy, Pittsburgh, reelected secretary.

Medical Problems of Prisons.—The medical section of the American Prison Association, which will meet in Atlantic City, October 9-11, has announced the following addresses by physicians:

Dr. Roy K. Flannagan, Richmond, Va., Medical Service in Jails.
Dr. Frederick S. Baldi, Philadelphia, The Neurotic in the Prison Sick Line.
Dr. Walter Freeman, Washington, D. C., Importance of Routine Neurologic Examination.

At the Atlantic City Hospital, Dr. Philip Marvel, Jr., will conduct a clinic on cardiac problems, Dr. Charles H. Shivers, on syphilis, and Dr. David W. Scanlan, hospital service and therapeutics.

Urologic Meeting.—Dr. Miley B. Wesson, San Francisco, was named president-elect of the American Urological Association at its thirtieth annual meeting in Chicago, June 20-22. Dr. Nathaniel P. Rathbun, Brooklyn, became president and Drs. Gilbert J. Thomas, Minneapolis, and James B. Cross, Buffalo, were reelected secretary and treasurer, respectively. Dr. Henry F. Helmholz, Rochester, Minn., gave the Ramon Guiteras Lecture on "Experimental Studies in Urinary Infections." Among other speakers were Drs. Gordon S. Foulds and Hugh Stanley Douglas, Toronto, on "Spinal Anesthesia in Urology"; William E. Lower, Cleveland, "Experimental Study of the Exocrine and Endocrine Functions of the Tes-

ticles" and Anson L. Clark, Rochester, Minn., "Ketogenic Diet in Treatment of Urinary Infections."

Cancer Demonstration.—Dr. Joseph Colt Bloodgood, Baltimore, announces that the next microscopic, oral cavity and bone demonstration will be held in Washington, D. C., September 17-24, instead of Baltimore as previously. The change was made because artificially cooled demonstration rooms have been made available in the Mayflower Hospital without additional cost. The diagnosis and treatment of cancer in all stages, and the local conditions that precede development of the disease will be covered in the demonstration, which is under the supervision of Dr. Bloodgood and Dr. Charles Geschickter, also of Baltimore. The program will include a conference on the problem of preoperative irradiation, Sunday evening; microscopic lantern slide demonstration, Monday; regular bone demonstration, Tuesday, Wednesday and Thursday, and oral cavity demonstration, Friday and Saturday.

Change in Status of Licensure.—The Indiana State Board of Medical Registration and Examination reports the following: License restored to Dr. James M. Sample, Nabb, June 19; the license was revoked, July 14, 1926.

The State Board of Medical Examiners of Florida recently reported the following action:

Dr. Ira Willis Ballard, Miami, license revoked, June 12, because of his conviction of violating narcotic laws; he is now in the federal penitentiary at Leavenworth, Kan.

The Board of Medical Examiners of the State of North Carolina reported the following:

Dr. Michael Roberson, Durham, recently withdrew an appeal from the action of the board in revoking his license, when he entered a plea of nolo contendere to a charge of performing an illegal operation, thus making effective the revocation ordered in 1931. Sentence in the recent case was suspended on condition that Roberson move out of Durham, withdraw his appeal and dispose of all his medical equipment within sixty days.

The Public Health Council of West Virginia has recently taken the following action:

The licenses of Drs. James Carney Hardman, Huntington, and Alvah L. Parsons, Charleston, to practice medicine in West Virginia were restored at a session of the council, July 11-13. The licenses were revoked, March 22, 1932, for violation of the narcotic laws.

Centennial Dental Congress.—The American Dental Association will celebrate its diamond jubilee and the Chicago Dental Society will hold its annual clinics as part of a Centennial Dental Congress in Chicago, August 7-12. Numerous special dental societies will meet during the week, which has been designated "Dental Week" at the Century of Progress. Dr. Hugh S. Cumming, surgeon general of the U. S. Public Health Service, will be a speaker at the opening general meeting, and at another general meeting Drs. Howard W. Haggard, New Haven, Conn., and Eben J. Carey, Milwaukee, will speak on "The Progress of Dentistry" and "A Century of Progress in the Medical Sciences," respectively. In the meetings of the scientific sections the following Chicago physicians will make addresses:

Dr. Wilber E. Post, Recent Developments in Focal Infection.
Dr. Lloyd L. Arnold, Lips and Tongue as Reservoirs for Oral Bacteria.
Dr. Clara M. Davis, Studies in Self-Selection of Diet by Young Children.
Dr. Anton J. Carlson, Some Unknowns in the Physiology of the Teeth.
Dr. Loyal Davis, Trigeminal Neuralgia.
Dr. Edward A. Oliver, Dermatologic Lesions of the Oral Cavity.

Dr. Arthur D. Black, Chicago, is president of the congress; G. Walter Dittmar, D.D.S., Chicago, is president of the American Dental Association, and Howard C. Miller, D.D.S., is president of the Chicago Dental Society.

Automobile Deaths in 1932.—During the calendar year 1932 there were 26,168 deaths from automobile accidents in the death registration area of the United States exclusive of Utah, the Bureau of the Census reports. This compares with 29,885 in 1931. The death rate was 21.9 per hundred thousand of estimated population for 1932 and 25.1 for 1931. Considering states by geographic divisions, the Pacific group had the highest death rate, 33.2. Separate states with the highest rates were Nevada, 63.4; District of Columbia, 38.7; California, 36.9; Arizona, 35.7, and Wyoming, 34.5. States which had the lowest rates were North Dakota, 8.3; Mississippi, 11.4; Arkansas, 13.9; South Dakota, 14.1, and New Hampshire, 15. In ninety-two cities with a population of 100,000 or more, there were 8,573 deaths, a rate of 22.8, as compared with 9,825, or a rate of 26.6 in 1931. Cities with the highest rates were Camden, N. J., 65.4; Nashville, Tenn., 45.9; San Diego, Calif., 41.6; Jacksonville, Fla., and Tacoma, Wash., each 41.5. The total number of deaths within a city cannot be taken as a measure of the automobile hazards, the bureau points out, as the location of the city, its hospital facilities and the volume of traffic all have an influence on the number of deaths. In Camden, for instance, only 27 of the 78 deaths resulted from accidents within the city, giving a rate of 22.7.

Institute for Hospital Administrators.—The American Hospital Association will conduct an institute for hospital administrators in Chicago, September 18-October 6. Subjects to be covered will include topics and principles of hospital planning; construction and reconstruction; different types of hospitals in the United States and Canada; their distribution and organization; hospital occupancy and methods of increasing it; relations of hospitals to the medical profession, public health work and social agencies; outpatient service; costs of hospital care and group hospitalization, and hospital ethics and publicity. Morning sessions will be devoted to discussions and seminars dealing with the organization of hospitals and such departmental problems as admissions, business management, nursing, food service, purchasing and supplies, outpatient departments, records and maintenance of plant. Speakers at the institute are expected to include Drs. Sigismund S. Goldwater, New York; Malcolm T. MacEachern and Bert W. Caldwell, Chicago; Michael M. Davis, Ph.D., and Clarence Rufus Roem, Ph.D., Chicago; the dean and faculty members of the University of Chicago school of business, Dr. Herman N. Bundesen, and members of the Council on Medical Education and Hospitals of the American Medical Association. Students attending the institute will visit Chicago hospitals and will have opportunity to study the particular subjects or departments in which they are interested.

Narcotics Limitation Convention Goes into Effect.—The International Convention for Limiting the Manufacture and Regulating the Distribution of Narcotic Drugs, ratified by thirty-nine nations, went into effect, July 9, by proclamation of the President. The convention, which was drawn up at a conference in Geneva, dated July 13, 1931, was ratified, April 10, when twenty-five countries had sent ratifications or accessions to the secretary general of the League of Nations. The convention is expected to constitute an important step in the suppression of the illicit drug traffic and limitation of the production to amounts needed for medical and scientific purposes. The U. S. Department of State points out that the advantages to the United States lie in the fact that the convention limits the quantities of dangerous drugs manufactured in other countries, tightens restrictions on legitimate traffic, and affords better facilities for suppressing the illicit traffic. The domestic manufacture of drugs in the United States is already closely limited to the medical needs of the country and the illicit traffic is supplied by drugs smuggled in from abroad. It is anticipated that little if any change will be made in this country's handling of the drug situation, as the government already limits the quantities manufactured, prohibits import of the habit-forming derivatives of coca leaf and opium and rigidly controls the legitimate distribution of the products. The government also maintains the special administration for control required by the convention in the Bureau of Narcotics.

FOREIGN

Journal Changes Name.—*Heart*, an English journal for study of the circulation, will henceforth appear under the name *Clinical Science, Incorporating Heart*. Sir Thomas Lewis is editor of *Heart*, which was first issued in 1909.

Statement on Plastic Surgery.—The French Society of Reparative, Plastic and Esthetic Surgery at a recent meeting issued a statement deploring the publication of articles in their specialty by persons without recognized scientific competence. Members of the society were warned against associating themselves in any way with charlatans or sending to unscrupulous persons patients who might be helped by this type of special surgery under proper conditions. "Members of the society can recognize as serious publications only those which are submitted to the sanction of discussion as is the custom in all scientific societies which are entered only after examination of the scientific work required by law," the statement concluded.

Society News.—The German Society for Diseases of Digestion and Metabolism has postponed its meeting which was planned for September in Berlin and will meet in the spring of 1934 at Wiesbaden in conjunction with the German Society for Internal Medicine. The first International Congress of Reparative, Plastic and Esthetic Surgery will be held in Paris at the Oceanographic Institute, October 13-14. Information may be obtained from Dr. Dartigues, 81 Rue de la Pompe, 16, or Dr. Charles Clauoué, 39 Rue Scheffer, 16. The annual meeting of the German Society for Gynecology will be held in Berlin, October 11-14. Information may be obtained from Dr. Frommolt, University Clinic for Women, Artilleriestrasse 18, Berlin N. 24.

Darling Prize Awarded.—The first award of the Darling Foundation Prize will be made, Jan. 1, 1934, to Lieut.-Col. Sydney J. James of the Ministry of Health, London, the Health

Organization of the League of Nations has announced. This award was created by the Health Organization in honor of Dr. Samuel T. Darling, an American physician who was killed in an automobile accident near Beirut, Syria, in 1925 while on a mission for the league. Dr. Darling engaged in public health work in the Panama Canal Zone, accompanied General Gorgas on a sanitary mission to South Africa and, as a member of the staff of the International Health Board, was head of a commission that investigated causes of anemia in Malaya, Java and Fiji. At one time he was professor and director of laboratories in the medical school of São Paulo, Brazil, and later was director of a laboratory of research on malaria in Leesburg, Ga.

Medical Center in Tokyo.—Two units of a new plant for St. Luke's International Hospital and Medical Center in Tokyo, the inpatient department and the college of nursing, were opened, June 4. Funds for the hospital were contributed by popular subscription in the United States. The college of nursing is the gift of the Rockefeller Foundation. Units to be completed are the outpatient department, administration quarters and public health department. The hospital, said to be the finest in Japan, is seven stories high and will accommodate 275 patients. The nursing school has facilities for 200 nurses. According to a statement issued by the hospital authorities, this is the only nursing school in the Orient. St. Luke's was founded thirty years ago by an American physician, Dr. Rudolph Bolling Teusler, who went to Japan as a missionary of the Protestant Episcopal Church. Hon. Joseph C. Grew, American ambassador to Japan, was among the speakers at the dedicatory ceremonies. Interests of the hospital in the United States are represented by a council headed by George W. Wickersham and including among its members Charles A. Lindbergh, Norman H. Davis and Thomas W. Lamont.

Festschrift Honors Dr. Czerny.—The *Journal of Pediatrics*, official organ of the American Academy of Pediatrics, for July was dedicated to Dr. Adalbert Czerny in honor of his seventieth birthday. Dr. Czerny is director of the Children's Clinic, Charity Hospital, Berlin, and professor of children's diseases at the Faculty of Medicine of Friedrich Wilhelm University. The publication of the festschrift was made possible by contributions of the following organizations: the Jacobi Fund of the Section on Pediatrics of the American Medical Association, the American Academy of Pediatrics, the American Pediatric Society and the Central States Pediatric Society. In addition to Drs. Samuel McC. Hamill, Philadelphia, Julius H. Hess, Chicago, Frank C. Neff, Kansas City, Mo., Oscar M. Schloss, New York, and Frederic W. Schlutz, Chicago, as representatives of the foregoing organizations, the committee in charge of the commemorative volume included Drs. Henry F. Helmholz, Rochester, Minn., chairman; Clifford G. Grulee, Chicago, editor of the *American Journal of Diseases of Children*, and Borden S. Veeder, St. Louis, co-editor of the *Journal of Pediatrics*. Dr. Czerny is a graduate of the German University of Prague, 1888, and has been associated with the Children's Clinic since 1913. A picture of the latter institution appears on the cover page of the festschrift.

Government Services

U. S. Public Health Service

Asst. Surg. Kenneth E. Gamm, relieved from duty on Coast Guard Cutter *Mendota*, Stapleton, N. Y., and assigned at Relief Station, Washington, D. C.

Passed Asst. Surgeon Lazelle B. Sturdevant, ordered to Coast Guard Cutter *Tahoe* for duty on Bering Sea patrol.

Medical Reserve Officers' Training

The Army Medical Field Service School at Carlisle, Pa., was ordered reopened, June 14, for a four weeks course of training for medical reserve officers from colleges and universities. The order rescinded a previous one which abolished reserve officers' training this year. Three hundred students received commissions at the commencement exercises, June 19.

CORRECTION

"The Newer Treatment of Strychnine Poisoning."—In the article by Drs. Samuel Stalberg and Harold S. Davidson (*THE JOURNAL*, July 8, p. 102), the dosage of the tribrom-ethanol preparation was stated to be 4 grains (0.26 Gm.) in 6 ounces (175 cc.) of water. The amount administered was 4 Gm. of tribrom-ethanol in 6 ounces of water.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 8, 1933.

The Treatment of Acute Appendicitis

The controversy over the treatment of acute appendicitis, which began in the spring of 1932, when the veteran surgeon Sir James Berry, at the Medical Society of London, deprecated too frequent operation, has passed into the hands of the younger surgeons and still continues. Berry's paper was followed by a series of letters in the journals from leading surgeons expressing contradictory views on the propriety of immediate operation in every case. The subject was again debated at the Royal Society of Medicine and with the same result (*THE JOURNAL*, Dec. 17, 1932, p. 2124). Then the Fellowship of Medicine arranged a debate by well known surgeons, at which Lord Moynihan presided, with the result that the voting was almost equally divided, there being a small preponderance in favor of immediate operation in all cases. One of the protagonists in that debate, Mr. R. J. McNeill Love, writing in the *Lancet*, divides the cases into four groups: early cases, subsiding cases, those in which the inflammation is still confined to the vicinity of the appendix without evidence that it is subsiding, and those complicated by peritonitis. The controversy centers on the third group, in which the patients are usually seen forty-eight hours or more after the onset. Three quadrants of the abdomen are relatively free from tenderness or rigidity, but these conditions are present in the right iliac fossa or right loin or a tender swelling is felt by rectum. Love points out that immediate appendectomy is often extremely difficult or may have to be abandoned after prolonged searching and considerable trauma. The congestion and turgidity of the bowel and omentum and the friability of the tissues and adhesions are obstacles to a well executed operation. However gentle interference may be or however carefully packing is inserted, the early protective adhesions are easily separated, and local may be converted into general peritonitis. Surgical intervention is particularly dangerous from the third to the fifth day, when natural immunity to infection is exhausted and acquired immunity has not been established (the "negative phase" of Wright). Operative intervention, by exposing fresh planes to infection, accelerates absorption of toxins when the patient is unprotected. The mortality of patients with purely local peritonitis operated on from the third to the fifth day at the London Hospital was 13.7 per cent, while the mortality of patients at the London and St. Thomas's hospitals operated on during all stages of local peritonitis was 5.8 per cent.

Love advocates expectant treatment but insists that the four F's must be rigorously enforced—Fowler's position, fomentations, fluids only and a four hourly chart. As a rule, expectant treatment is not suitable for children or the aged. Children are unlikely to give an accurate history and usually have been given purgatives. The mortality of expectant treatment is only 3 per cent, and 65 per cent of the cases undergo resolution.

Another London surgeon, Mr. R. A. Ramsay, replies to this defense of expectant treatment by saying that experienced surgeons do not attempt removal of the appendix in the presence of the obstacles described and do not separate adhesions. He would "leave severely alone" cases in which congestion and turgidity of the bowel and omentum and friability of the tissues are present. But Love points out that in cases of recent local peritonitis these are the usual conditions found. Surely the obvious way to leave these tissues "severely alone" is not to operate. In many cases the "perityphilitis" is not adherent to the abdominal wall and a tube inserted to "let out the pus" (as advocated by Ramsay) traverses the uninfected peritoneal cavity. More-

over, in 65 per cent of the cases treated expectantly, resolution occurs without suppuration.

An International Standard for the Estrus-Producing Hormone

In July, 1932, a conference was held in London under the auspices of the Permanent Commission on Biological Standardization of the Health Organization of the League of Nations, to discuss international agreement on standards of reference and units of activity for the sex hormones. It was agreed that knowledge of the male sex hormone and of the hormones of the corpus luteum and anterior pituitary body is sufficiently advanced to permit of a standard of reference being established and a unit of activity defined. Important decisions were also reached as to the estrus-producing hormone, which has been prepared from the urine of pregnancy in quantities sufficient for chemical examination. It exists in two forms—a ketohydroxy and a trihydroxy. The former is the more active in producing estrus in animals from which the ovaries have been removed. The conference agreed on the adoption of a standard substance in terms of which the unit could be defined as the only safe basis for international use. The ketohydroxy form of the hormone in pure crystalline condition, preserved at the National Institute for Medical Research, London, was adopted. The unit of activity was defined as that contained in 0.0001 mg. of this substance.

In order to provide an adequate amount of material to serve as an international standard, different countries have sent samples of the pure crystalline ketohydroxy form of the estrus-producing hormone to the National Institute of Medical Research, London, which for this purpose is acting as the central laboratory on behalf of the Health Organization of the League of Nations. At the institute the final preparation of the standard has been completed and arrangements have been made for its storage and dispatch to the laboratories in other countries, which have been nominated by the Health Organization of the League of Nations.

The Experimental Production of Malignant Tumors

At the Royal Society, Dr. J. A. Murray said that investigations of the last thirty years proved that under appropriate conditions the cells of the higher vertebrates were capable of unlimited proliferation. Loose statements were made in the literature that this or that agent conferred on the cells powers of unlimited new growth. This was nonsense, as the cells already possessed such powers. Murray discussed the various suggestions as to the cause of malignant growths. There was first the genetic hypothesis of Boveri, modified by Bauer. The main objection to it was the necessity of assuming a large number of units in each gene, to allow for the great number of slight modifications presented by the new growths of any one tissue, all practically permanent. Gye's conception of a factor derived from the host's cells and carrying all the specific characters of the tumor strain, acting in conjunction with a relatively nonspecific virus, was still without direct experimental proof. Like the enzyme modification, the greatest objection to it was the failure to demonstrate cell-free transmission in the laboratory strains of mouse and rat tumors. Finally there was the special form of the chronic irritation theory of Virchow, which had arisen on the basis of Yamagiwa's work on the experimental production of tar cancer. The experimental confirmation of Virchow's theory had established its validity as a concise description of the emergence of cancer after prolonged localized irritation of the tissues by a variety of agents, and nothing more. Wide differences of opinion still existed as to how this result was brought about. In Dr. Murray's opinion the chemical and physical carcinogenic agents acted directly. The chemical properties of these agents gave no indication how the autonomous and uncontrolled type of proliferation was

induced. Dr. Murray concluded that the experimental production of malignant growths reproduced perfectly the phenomena that occurred in the development of occupational cancer—from exposure to tar or x-rays, for example. The other forms of cancer for which no definite irritant could be identified at present were so similar in their mode of occurrence and the time necessary for their appearance that it was reasonable to accept experimental carcinogenesis as a model for them.

The German Persecution of Jewish Physicians

An appeal was made to the General Medical Council (the official body which controls medical education and registration in this country) from the Jewish Medical Emergency Association, which has been formed to alleviate the sufferings of Jewish physicians whose position has been rendered untenable by the policy of the Hitler government. The association pointed out that numbers of these men, unable to carry on practice in their native land, were being driven abroad, and some of them would be able to settle in this country. The examining bodies here require from those holding a German medical degree and who desire to qualify in this country that they take the anatomy and physiology examination, and then, after two years, the final examination. It was pointed out that those affected by the regulations might include some of the most distinguished names in medical science in Germany. The hardship of strict enforcement of the regulations was obvious, and while the association appreciated that freedom of action was vested in the examining bodies, it felt that those bodies would be only too glad to be guided as to some humane relaxation by any recommendation from the council. The executive committee of the council resolved to inform the association that the granting of qualifications was a matter for the licensing bodies, and, provided the resolutions of the council in regard to the medical curriculum were adhered to, there were no grounds for independent action on the part of the council.

PARIS

(From Our Regular Correspondent)

June 21, 1933.

The Chaotic Organization of Hygiene in France

Dr. Hazemann publishes in the *Mouvement sanitaire* the report of an inquiry into the results secured by French hygienic legislation, which he says are not in proportion to the expenditure of money and effort. Countless laws have been passed concerning the various branches of hygiene—from the crusade against infectious diseases down to the care of the child, the mother, the infirm, the aged and the workers. All require the creation of organizations and the appointment of special officers, which is expensive. Many organizations constitute duplication of effort. Others are working at cross purposes. The inadequacy of the results is due less to a lack of good will and clearheadedness than to a veritable administrative chaos. For example, vacation colonies for children have been scattered over France with little thought as to the choice of the most favorable places for their location. All these societies function without any connection with one another, being subject to the whims of local influence. The same conditions are found in other fields. With a better organization superior results might be obtained. The sums expended for the piping of drinking water from a distance, which amounted to a few thousand francs in 1903, amount today to a sum forty times as great. Nevertheless, of 2,000 cities of more than 3,000 inhabitants, 12 per cent have not an adequate supply of pure drinking water. Only two thirds of the communes of France have a reliable water system. The capacity for organization appears to be generally lacking. The bad conditions are not due to a lack of money. In 1914 the appropriations for the department of health amounted to 140,000,000 francs, or nearly \$28,000,000. In 1930 they were nearly double that (gold value), amounting to more than 2 per

cent of the total budget of the republic. In dividing expenditures for public health into the following five classes: one finds in each class a steadily increasing appropriation: (1) hygiene, salubrity, epidemics; (2) maternal and infant protection; (3) crusade against tuberculosis; (4) campaign against venereal disease; (5) crusade against cancer. Likewise the same items in the departmental budgets show a steady increase, with the result that in 1927, out of a total expenditure of nearly 4,000,000,000 francs (\$156,800,000), one fourth was for "assistance-hygiene" and 1.8 per cent of the total for purely hygienic enterprises. The retrenchments effected in 1933, which became necessary as a result of the economic crisis, did not affect the appropriations for hygiene, although, on the whole, the departmental budgets were diminished by more than 10 per cent. In seven years the sales of tuberculosis seals have brought in nearly 100,000,000 francs (\$3,920,000). In 1924 there were eleven departmental inspection services entrusted to full-time physicians. In 1931 there were seventy-one, together with thirty-seven departmental bureaux of hygiene, seven of which confine their attention to tuberculosis. The services looking toward the protection of mothers and children counted, in 1931, nearly 600 centers for prenatal consultations, more than 400 maternities, 133 homes for mothers, more than 4,000 consultation centers for the care of nurslings, nearly 600 day nurseries, nearly 200 nurseries for infants, and more than 100 supervisory centers for the placement of children in families. Thirty-three departments of France have an organized medical inspection schools. There are nearly 900 vacation colonies. Nine departments of France have an organized society that carries on a crusade against tuberculosis. These societies have 80 dispensaries and approximately 40,000 beds available for the tuberculous, or twenty times as many as in 1913. The preventive services have, in addition, 14,000 beds available. The crusade against syphilis is carried on by nearly 1,700 services. There are twenty-five anticancer centers. There are more than 2,700 visiting nurses on duty. The eighty-five training schools have more than 3,000 pupils. These facts show that considerable progress has been made since the war. In the face of the great financial sacrifices made and the great labor involved, the question is in order as to whether important results have been secured. The mortality of young adults in England and Germany is only half that of persons of corresponding age in France. Tuberculosis continues its ravages; they are possibly less severe than formerly but are still very significant. With the available resources, Dr. Hazemann says frankly, one should do more and better. Efforts should be directed toward improving the technique; toward realizing, through coordination, unity of method and action. He cites as an example the region of Nancy, where Dr. Parizot has been able to accomplish better results through the creation of a central committee composed of representatives of all the private and public organizations concerned with the promotion of hygiene, this committee serving each month as a clearing house so as to avoid duplication of effort. A card index, which is kept up to date, aids greatly in this control and makes it possible to compile exact statistics which are lacking in most departments of France.

Yellow Automobile Lights

The use of yellow lenses, recommended since 1906 by Motais and Tscherning, as giving better illumination with less fatigue for the eye, has received an interesting application through Monnier and Mouton in automobile lamps. With yellow cadmium lenses, specimens of which they have presented to the Academy of Sciences, the dazzling effect of automobile lamps encountered during the night is suppressed. This glass, owing to the slight thickness required by the conditions of manufacture of the lenses, transmits poorly radiations of a wavelength below 0.490 millimicron, but this power of transmission increases rapidly as the wavelength approaches 0.510 milli-

micron, then remains practically constant for radiations of greater wavelength. The authors compared the rays emitted by automobile projectors with lamps having yellow lenses and with lamps of the same luminosity with colorless lenses. They noted an increase of visual acuity of 10 per cent; likewise an increase of the visibility due to a slight diffusion of the yellow light, not only in clear but also in foggy weather. This increase in visibility was evaluated by noting the distances at which an observer could distinguish a black object on a dark background. In an experiment carried out in clear weather, they secured the following results: with a white light, 130 meters; with a yellow light, 160 meters. Finally, they observed with the yellow lenses a frank diminution of the readaptation time of the eye to normal vision after prolonged dazzling. To summarize, the application to automobile projectors of yellow light entirely deprived of blue and violet radiations causes a lessening of the dazzling effect and a frank increase of the visibility.

Practicing Medicine Under a Changed Name

French law prohibits the practice of medicine under any other name than the true name of the holder of a diploma as registered at the prefecture of the department. Many foreign physicians seek to change their names on the pretext of making them easier to pronounce, but the main object is to conceal their nationality. These changed forms of names consist sometimes of simple translations, which deceive the public. Klein becomes Petit, Delbrück becomes Dupont, for example. On the other hand, it sometimes happens that a French physician seeks to practice his profession in another part of the country under an assumed name. The minister has urged the authorities to cooperate with him in putting an end to these abusive practices. A Rumanian physician by the name of Fliesmann, having acquired his diploma in the proper manner at the Faculté de Paris, opened an office in Paris, after assuming the French name Florian. He has been sentenced to pay a fine of \$5 and an indemnity of \$50, payable to the syndicate of the physicians of the Seine region, who brought suit against him.

VIENNA

(From Our Regular Correspondent)

June 20, 1933.

Report of Public Health Service

The report of the public health service of Austria gives a picture of the changes in the population during the year 1932. The number of inhabitants was 6,536,892 (less than that of London or New York). Marriages showed a decrease as compared with the previous year (51,753 > 45,332). The steadily decreasing birth rate is a reflection of unemployment. Only 105,431 births were notified, a decrease of more than 4,000 over the previous year. The number of deaths (93,078) showed a decrease of 1,540. Nevertheless, one can observe here also the effects of the crisis if one considers the mortality according to age groups. Not only in children under 5 years of age but also in the 10-15 age group a distinct increase of mortality amounting to more than 10 per cent was observable. The reduction in the total number of deaths is due to the downward trend in the figures in the older and stronger age groups. This circumstance may be due to the increased resistance of the masses, resulting from improvement in hygienic conditions and the medical care during the past fifteen years. Deaths from tuberculosis have declined further. The economic crisis, which is increasing the incidence of tuberculosis, will show its effects on mortality later. Its influence can already be seen in the increase in the number of deaths due to colds and to infectious diseases resulting from reduced resistance—particularly of the children. The increase concerns chiefly pneumonia (7,934), diphtheria (989), measles (380, as against 120 in 1931), scarlet

fever (148), and, particularly, cholera infantum, which shows an increase of 30 per cent. Not a case of genuine cholera or smallpox was notified in 1932, and no cases of typhus were reported. The deaths from malignant neoplasms numbered 11,549 (an increase of 500); from diseases of the heart and the circulatory organs, 15,844 (an increase of 200); as the result of suicide, 2,972 (an increase of 197); 215 persons were murdered; 2,642 were killed in accidents (an increase of 100). If one takes the figures for Vienna alone, one finds a total mortality of 24,808, or 23 per cent of the total mortality, although Vienna has a population of 1,800,000, or 28 per cent of the total population of Austria. In Vienna there were 2,337 deaths from tuberculosis of the respiratory tracts, 3,998 from neoplasms (of which 4 per cent were in the esophagus), 402 from diabetes mellitus, 248 from leukemia, 5,661 (more than 30 per cent of the total for the republic) from diseases of the heart and the circulatory organs, 2,485 from diseases of the nerves and the sensory organs, 1,971 from pneumonia and pleuritis, 1,504 from gastro-intestinal diseases, 746 from diseases of the urogenital apparatus, 113 as the result of pregnancy or childbed fever (in Austria, as a whole, the number was 209), and 2,100 from cerebral hemorrhage (as compared with 5,937 in Austria). Under 1 year of age, 1,091 children died, as against 10,887 in all of Austria, or only 10 per cent, a proof of the superiority of the hygiene of the capital. The unusually large number of deaths (more than 50 per cent of the total) due to pregnancy and childbirth in Vienna is explained by the circumstance that the majority of the grave cases from the rural districts are brought to the Vienna hospitals. However, the total number of fatal cases (209) is small in comparison with other European countries, with the exception of Germany.

The Removal of a Large Hemangioma

In connection with an operation on an unusually large hemangioma, Dr. Demel experienced a severe hemorrhage, which forced him to interrupt the operation and to postpone the removal of the tumor until later. By the injection of a hypertonic sugar solution into the hemangioma the latter is changed into a solid tumor, the removal of which becomes simple. The bleeding is nil or slight. To get an idea of the size of the hemangioma, 20 cc. of a sodium salt of mono-iodomethanesulphonic acid is injected into the hemangioma before the application of the sugar treatment, and toward the end of the injection a roentgenogram is made. In this manner one obtains information in cases in which a connection of the angioma with important venous areas cannot be assumed or denied without an examination. Dr. Demel, who recently gave a demonstration before the Gesellschaft der Aerzte, suggests that this method be employed in suitable cases.

Permanent Cures of Skin Cancers

Prof. Dr. Arzt, director of the Vienna University Dermatology Clinic, and his assistant, published statistics on the results of treatment of cancer at the radium station of the university clinic. Cases are designated as "permanent cures" only when the malignity was established microscopically beyond doubt and when they remained at least five years without a recurrence. Among 386 controlled cases, a permanent cure was effected in 289, or 75 per cent. These results are equal to those secured in the Radiumhemmet in Stockholm, and in some types of cancer they are superior. The prognosis of pure radium irradiation and of radium irradiation combined with surgical intervention is, according to the experiences of the Vienna clinic, equally favorable, on the average. Pure radium therapy is preferable if it is the purpose to avoid an operation in cases of weakened or aged patients, or when cosmetic reasons are to be considered. In skin cancer a combination of the two methods is generally to be preferred, since the duration of the treatment is thereby considerably shortened, and, consequently, smaller doses of

radium are required. In cancer of the lip, so-called interlarding of the tumor with radium needles, together with cross-fire irradiation with pure gamma rays, has yielded excellent results. This method, as was recently announced in another publication, has given excellent results also at the radium station in the Vienna Municipal Hospital.

Prof. Viktor Mucha's Death

The death of Prof. Dr. Viktor Mucha (who was well known to American physicians who studied in Vienna), at the age of 56, has been announced. As demonstrator for Professor Ludwig in his courses on chemistry, and while serving, in the same capacity, Professor Weichselbaum, under whom he studied pathologic anatomy (1902-1905), Mucha gave evidence of his scientific qualities. He entered later the Dermatologic Clinic of Professor Finger, where he soon became the first assistant. He devoted himself particularly to venereology. He accepted the post of general consultant in venereal diseases for the army of occupation in Russia. When, in 1919, a special institute for women with venereal disease was created, he took over the directorship. He organized there the modern therapy of prostitution, which essayed not merely to heal disease by the use of medicaments but also to combat the psychic factors of prostitution by means of occupational therapy and social aid. To him medicine is indebted for the demonstration of *Spirochaeta pallida* in the dark field.

Poisoning from Arsenic in Wall Covering

Several years ago, Prof. Dr. Oppenheim called attention to the frequent cases of poisoning occurring through the employment of arsenic in wall paints and wall paper. Prof. E. Freund presented recently, before the Vienna Gesellschaft der Aerzte, a woman, aged 56, who, following an attack of articular rheumatism, developed a severe polyneuritis. There were paresthesias, pain in the muscles, weakness, soreness of the muscles, disturbances of sensibility, paresis, and absence of the reflexes of the upper extremities. The blood showed eosinophilia of 14 per cent, although the internal organs were apparently normal. In the urine distinct traces of arsenic were demonstrated, and, in addition, an extensive herpes zoster, arranged in segments, appeared on the side of the thorax. In the green scrapings of the wall paint (which had been applied five years previously) arsenic was found. The diagnosis of polyneuritis due to arsenic intoxication was clearly established. Professor Freund emphasized again the importance of prohibiting the use of any arsenic-containing salt in dyes used in wall paper or in wall paints. The industrial requirements have doubtless been more strictly observed in recent years, so that, at present, poisonous paints are not likely to be used in Austria. But apparently there are still sources of poisoning, which possibly, under the influence of decomposition and crumbling of old wall coverings, cause a chronic though imperceptible absorption of arsenic.

It should be added that sudden unexplainable loss of hair suggests the possibility of arsenic poisoning.

Address of Professor Eppinger

The new director of the first Medicinische Klinik, Professor Eppinger, who was summoned from Cologne as the successor of Professor Wenckebach, assumed today his duties as instructor in internal medicine. In his inaugural address, which was heard by the leaders of the medical societies, he gave a survey of the changes that have taken place in the trends of his specialty during this century. Whereas some investigators have directed their attention to morphology, another group (particularly in Germany) has displayed greater interest in the physiologic side. One group laid emphasis on the functional diagnosis and the conceptions of sufficiency and insufficiency. The others studied the problems of experimental physiology

and their importance for the clinic. In Vienna, the idea has gained ground that pathology is nothing more than a changed form of normal happenings. In connection with experimental pharmacology the new clinical therapeutics has developed. Professor Eppinger emphasized that his method of research (theoretical-experimental) brings him into close connection with therapeutic questions, which he will expound in his lectures. The discovery of new facts and the attainment of new acquisitions will receive full consideration in the management of the Medicinische Klinik. Eppinger, who is a native of Vienna, was welcomed with a storm of applause.

BERLIN

(From Our Regular Correspondent)

June 19, 1933.

The Status of Social Insurance

Recent letters have supplied the latest reports on the financial condition of the health insurance societies. Now the federal bureau of statistics has published the reports for 1932 on the financial situation in all branches of federal social insurance, which show the effects of the numerous emergency decrees for the rehabilitation of social insurance. If unemployment insurance is left out of consideration, the total deficit in the ordinary social insurance system was reduced from 36,200,000 marks (\$8,615,600) in 1931 to about 8,500,000 marks (\$2,023,000) in 1932. The retrenchments in expenditures corresponded to the reduction in receipts in the form of dues, brought about by unemployment and loss of wages. For example, the total receipts in 1932 were 3,300,000 marks (\$785,400), as against 4,100,000 marks (\$975,800) in 1931, and the total expenditures in 1932 were about 3,300,000 marks (\$785,400), as compared with 4,100,000 marks (\$975,800) in 1931. The reduction on both sides of the ledger was about equal, amounting to about 20 per cent. These figures show, to be sure, the application of rigorous measures to the annual budget. The situation in the several branches of the social aid system varies, as is evident in a comparison of receipts and expenditures in 1932 with those of the normal year 1929:

| | Receipts (1929 = 100) | Expenditures (1929 = 100) |
|----------------------------|--------------------------|------------------------------|
| Health Insurance | 57% | 55% |
| Accident Insurance | 60% | 80% |
| Disability Insurance | 63% | 97% |
| Employment Insurance | 90% | 142% |
| Guild Insurance | 74% | 85% |

The retrenchments in health insurance have been the most drastic. The reduction in receipts in this field, for 1932, was, however, less than the reduction in expenditures, which left a surplus of about 30,000,000 marks (\$7,140,000), as compared with a deficit of 56,000,000 marks (\$13,328,000) in 1931. The total receipts for health insurance (including the *ersatzkassen*) amounted to 1,240,000,000 marks (\$295,120,000) as against 1,600,000,000 marks (\$380,800,000) in 1931, whereas the total expenditures dropped from 1,670,000,000 marks (\$397,460,000) to 1,210,000,000 marks (\$287,980,000).

In accident insurance the total expenditures diminished from 420,000,000 marks to 330,000,000 marks (from \$99,960,000 to \$78,540,000), or more than 20 per cent. But the total receipts dropped still more; namely, from 389,000,000 marks (\$92,582,000) to 295,000,000 marks (\$70,210,000), whereby the deficit of 31,000,000 marks (\$7,378,000) was increased to 35,000,000 marks (\$8,330,000). The expenditures for accident benefits fell 20 per cent below those for 1931, which was due to the complete cancellation of all small accident benefits by the emergency decree of December, 1931.

In disability insurance in 1932 the deficit was about 185,000,000 marks (\$44,030,000). The receipts from dues are today barely

sufficient to cover half of the cost. The number of annuitants has been reduced by about 10 per cent.

It is evident from this new report that, in spite of many reforms, a real rehabilitation of the social aid system has not yet occurred. This is confirmed by the fact that the federal subsidies granted the social aid system in 1932 amounted to 478,500,000 marks (\$113,883,000) as compared with 487,700,000 marks (\$116,072,600) in 1931.

Reorganization of the Welfare Aid System

Göring, chairman of the Prussian cabinet, has set up principles according to which all boards are to reorganize public and voluntary welfare aid. The following passage is cited:

The reorganization of Germany's cultural life and form of government necessitates likewise certain modifications of the relation between public and voluntary welfare aid. The well meant endeavors of the past to perform the tasks of the public welfare system by means of public centers have proved a fatal mistake. Following this trend, the public welfare system created its own equipment and machinery likewise in places where the equipment of voluntary welfare organizations was already adequate. As the result of this duplication, full usage of tried existing arrangements of the voluntary welfare organizations became impossible and the administrative costs of welfare aid as a whole were increased. At the same time, political influence became paramount and the whole welfare aid system lost touch with the people. In welfare work the most effective help comes from the contacts of man to man. Welfare work, particularly among juveniles, can never dispense with that offered voluntarily by reason of love of mankind and because of a sense of responsibility for the general welfare. Voluntary welfare aid should therefore be made wide use of.

By "voluntary" in contradistinction to "public" welfare work is meant the social aid that is furnished to one's neighbor as a free service. The voluntary welfare system in Germany is partly in the hands of the churches and in part expresses religious equality, with no distinctions as to church affiliation. It is made up of several large federal leagues. The systematic welfare work performed by these leagues constitutes, in addition to the social performances of the central government, the communes and social insurance, an important factor in the life of the people.

The welfare work carried on by the evangelical church under the general term "home missions" employs, in various institutions and centers, more than 70,000 professional workers, including 45,000 female graduate nurses and 3,800 practical nurses. In its hospitals, retreats and training homes there are about 220,000 beds. The Catholic Charity League employs 78,000 female nurses and more than 3,000 male nurses and has a total of 255,000 beds. These figures do not include the kindergartens, and homes for underprivileged children.

The German Red Cross Society performs its welfare work without distinction as to race or religion. The membership at present is 1,500,000. It has 9,800 female nurses and more than 130,000 sanitary corps men. In the ladies' aid societies there are 800,000 women and girls enrolled. The number of beds in the hospitals, retreats, nursing and training homes is about 20,000.

The Deutscher paritätischer Wohlfahrtsverband comprises a large number of welfare institutions and welfare societies that, owing to their peculiar character, belong neither to the church leagues nor to the Red Cross. With its 48,000 beds and its homes and shelters with more than a million "clients," it constitutes an essential factor in the voluntary welfare system of Germany.

In addition to these leagues, which have existed for years, there is in process of development the welfare service of the national socialists. On the development of this welfare service will depend whether the voluntary welfare system will be

entitled to take over certain fields now administered by the public welfare system.

From the figures cited, one gets some conception of the extent of the voluntary welfare system in Germany in the fields of care of patients, promotion of health culture and domiciliary aid. From conservative estimates, the institutional work of the German voluntary welfare system saves the public welfare administration at least 250 to 300 million marks (from \$59,500,000 to \$71,400,000) annually.

The Consumption of Alcoholic Beverages

In previous letters, attention has been called to the reduction in the consumption of alcoholic beverages in Germany. According to the latest statistics, both beer and brandy show a reduced consumption. In the fiscal year 1929-1930, the consumption of beer amounted to 90 liters per person for the whole population, whereas in 1931-1932 it was 56.8 liters per person; in the last nine months of 1932 a further reduction in the consumption of beer amounting nearly to 12 per cent is reported. The consumption of beverage brandy (figured on the basis of 100 parts alcohol) was reduced from 0.75 liter per person to 0.61 liter.

Statistics on Suicide

Recently Chancellor Hitler announced in the Reichstag that, since the day of the signing of the Versailles treaty, 224,900 persons in Germany have committed suicide. The figures for the German reich are as follows:

| Year | Total Number of Suicides | Number of Women Suicides |
|-----------|--------------------------|--------------------------|
| 1919..... | 5,800* | |
| 1920..... | 13,319 | |
| 1921..... | 12,700 | |
| 1922..... | 13,402 | |
| 1923..... | 13,288 | 2,563 |
| 1924..... | 14,338 | 3,020 |
| 1925..... | 15,273 | 4,201 |
| 1926..... | 16,480 | 4,634 |
| 1927..... | 15,974 | 4,647 |
| 1928..... | 16,036 | 4,797 |
| 1929..... | 16,665 | 4,829 |
| 1930..... | 17,880 | 5,208 |

* Estimate for the second half of the year.

A comparison with the prewar figure reveals that the percentage of suicides has steadily increased. Before the war, one figured about 23 suicides to 100,000 of population, whereas now the proportion is in excess of 31. The percentage of women, and especially unmarried women, has greatly increased, whereas most of the male suicides have been married men.

University Teachers Serving as Consultants

The Prussian minister of public instruction has sent a bulletin to all the university teachers under his jurisdiction, in which he discusses the question of teachers serving as consultants. The rendering of expert opinions brings about a closer union of the university with the problems of practical life. In many cases the expert opinions are desired by eminent persons. Such activity, if carried to extremes, may distract the attention of university teachers from their essential tasks and expose them to attacks, which, in the interest of the authority and reputation of the higher schools of learning, is far from desirable and may impair the work of the liberal professions. The teachers in schools of higher learning should therefore be conservative and accept only such outside tasks as involve scientifically important questions and are in keeping with their position as teachers and investigators.

Undulant Fever in Germany

When, four years ago, an order was issued requiring cases of undulant fever to be notified throughout the German reich, an increase in the number of cases was expected. In spite of the fact that the examining centers in the past three years have

tested all blood specimens sent to them, for *Alcaligenes abortus* agglutination, the expected increase has not been observed. The number of notified cases has, in fact, decreased from 626 in 1929-1930 to 498 in 1931-1932. Of the patients notified, only one died (a man aged 63, whose heart apparently was previously seriously damaged by arteriosclerosis). No miscarriages in women or transmission from man to man were observed. The principal sources of the infection, as in the past, were doubtless contact with infected cattle or the use of raw milk.

The Munich Medical Foundation

Professor Friedrich von Müller, internist of Munich, has founded the Münchener Mediziner-Stiftung. The object of the foundation is to furnish aid to members of the faculty of medicine at Munich, when in distress; also to members of their families. The foundation will likewise promote scientific research.

Prof. Erich Leschke's Death

The death of Prof. Erich Leschke, June 10, at the age of 45, has been announced. After studying physiology under Pflüger in Bonn, Leschke served as assistant to F. Kraus at the second clinic of internal medicine at the Berlin Charité Hospital. In his research, he devoted himself chiefly to disorders of the vegetative nervous system, and to problems pertaining to internal secretion and diseases of metabolism.

ITALY

(From Our Regular Correspondent)

May 30, 1933.

Meeting of Pediatricians

The Società italiana di pediatria, chapter of Venezia Euganea, met at Padua under the chairmanship of Professor Allaria, on the fiftieth anniversary of the creation of the chair of pediatrics in Padua, which was the first to be established in Italy.

Baccichetti of Treviso analyzed the 506 cases of laryngeal diphtheria admitted to the hospital from 1927 to 1932. In the 446 cases of intubation, not one was dismissed with chronic laryngeal stenosis secondary to intubation. The tube remained in the larynx in some cases more than a month; nevertheless, in no case was a cicatrix observable. Short tubes that were easy to remove were employed. No recourse was had to secondary tracheotomy, the operator preferring, if necessary, to increase gradually the caliber of the tube. Of the 446 patients in whom intubation was performed (thirty-six of whom were under 1 year of age), twenty-eight died.

Professor Brunetti brought out that otorhinolaryngologists, on the whole, look with disfavor on intubation. Professor Frontali stated that the number of children subjected to intubation who become invalids is very small, although the laryngologists raise that objection. He recommended early intubation in all cases of laryngeal stenosis, even though of moderate type.

Orefice of Vicenza reported on an epidemic of acute anterior poliomyelitis in the province of Vicenza. The twelve children attacked were nearly all under 2 years of age. In three cases the disease was rapidly fatal, following the development of the Landry type of acute ascending paralysis. The milder cases improve either through natural retrogression or with the aid of medullary roentgenotherapy—especially if applied early. Professor Frontali said that the disease is endemic in the province of Padua. He had the impression that the course of the disease is not much influenced by the use of the Pettit serum, which, as purchased on the market, is derived from horses. Professor Allaria admitted that he also had not secured encouraging results with the commercial Pettit serum.

Careddu of Padua reported 158 cases of acute pulmonary disorders in children admitted during the past two years to the Clinica pediatrica of Padua, of which 116 cases were bronchopulmonary and forty-two were lobar pneumonia. In

the bronchopulmonary types, convulsions or meningeal disorders occurred in 2.5 per cent of the cases. Among the cases of lobar pneumonia, however, 21.5 per cent showed marked nervous phenomena, as revealed by hyperexcitation, meningeal signs and convulsions.

Professor Frontali discussed congenital stenosis of the pylorus. He said that the disorder occurs more frequently in Italy than the statistics indicate. A precise diagnosis is necessary in children who habitually vomit to discover those in which vomiting is due to an anatomic obstacle rather than to a spastic disorder. In such cases, the Werner-Ramstedt intervention is indicated.

Delitala of Venice explained the early surgical treatment of such deformities as spina bifida, stenosis of the pylorus, anal imperfections and megacolon. There is much discussion as to the best time for intervention in other deformities—whether during or after the period of lactation or years later. During the first twenty-four hours after birth, the resistance of the new-born is greatest, and all plastic operations give better results, the sooner they are performed after birth.

A discussion arose on infantile scurvy, in which Bombassei, Orefice and Frontali participated. Infantile scurvy may occur also in breast-fed children if the mother has a defective diet; for instance, if she lives chiefly on maize pudding. The cases are numerous if, in addition to the frank cases, those are included which show the changes in capillary fragility that precede the true scorbutic lesions.

Trachoma

Dr. Parisotti, who presented a paper on trachoma before the Academy of Medicine in Rome, observed years ago an epidemic of acute conjunctivitis in children. At the end of the acute stage, in seven persons who had been free from the disease, trachoma developed. The author conceived the idea that a trachomatous person does not transmit trachoma but conjunctivitis, which is its substratum, and that trachoma is the result of conjunctivitis with a constitutional base. Trachoma, in other words, develops in persons of weak organic structure, often with manifestations of adenoidism. The histopathology of trachoma serves to strengthen the conception of the author, whereas the bacteriologic researches, begun in 1880, have today only reached a point of which Nicolle could say, in 1930, that the research on trachoma has scarcely started.

BELGIUM

(From Our Regular Correspondent)

June 20, 1933.

Bronchiectasis

The Société belge d'études scientifiques sur la tuberculose took up recently the subject of the pathology and treatment of bronchiectasis. Drs. Derscheid and Toussaint attempted a classification of these disorders. To class 1 they assign acute bronchiectasis, involving often a whole lobe, more commonly the left inferior lobe. In addition to medical treatment, including the thirst treatment, the postural treatment, the use of spirillicides, emetine, methenamine, colloidal metals, colloidal sulphur, balsamics and injections of alcohol, they recommend early bronchoscopy, artificial pneumothorax and surgical methods of exeresis. Class 2 includes chronic infected bronchiectasis with infectious paroxysms, amenable to active bronchoscopic cleansing with antiseptics to reduce the bronchorrhea; then phrenectomy or pneumothorax, combined, during the first months, with instillations by means of a sound at increasingly prolonged intervals, and possibly exeresis. Class 3 comprises noninfected dry bronchiectasis, in which, aside from a possible specific therapeutics, the treatment is to prevent infection. Class 4 groups the types of clinically benign bronchiectasis, dry or secreting (persons affected by war gases or tuberculous

persons). In addition to the etiologic treatment of the causal disorder (gout, diabetes, renal or hepatic deficiency), the authors recommend climatotherapy, arsenical and sulphurous crenotherapy, balsamics and colloidal sulphur.

Report on Ancylostomiasis

The mission organized for the study of ancylostomiasis has published a report. The feces were examined by a modification of the Stoll technic. Ancylostoma was found in 71 per cent of the 2,653 stools examined. The blood in the feces was examined by means of the amidopyrine test. Blood is always present when there are more than 3,000 ova per gram of fecal matter. An antigen can be secured by drying and pulverizing the worms. Fixation of complement is obtained in 78 per cent of the cases in subjects who present 1,000 ova per gram and in about 90 per cent of the cases in those who present more than 1,000 ova.

The chief physician of the colony made an investigation at Mayumbe, in the western part of the Belgian Congo region, to determine whether helminthiasis, and particularly ancylostomiasis, increased the mortality among the inhabitants. The infection is more prevalent in the plains than in the mountain regions, and the effects are more pernicious.

Medical Aid for African Natives

The report on the first activities of the Queen Elizabeth Fund for the promotion of medical aid for the natives of the Belgian Congo has appeared. This report covers a period of fourteen months, and already the results of this benevolent organization are manifest. On several occasions—notably at the colonial congresses of 1920 and 1926—the king declared that it was necessary to give health matters first place in planning work in the colonies. In 1928 the journey of the king through the colony strengthened this opinion and induced the government to intensify its work against diseases that threatened the existence of the native black population. Two years later, parliament voted an appropriation of 50,000,000 francs, to which was added 100,000,000 francs to complete the extraordinary budget of the colony for the year 1930. It was then possible to consider the creation of a special fund for medical aid to the natives and to grant the administrator of the fund power to enable him to adapt his activities to the circumstances and to use his financial resources without being hampered by restrictions affecting the budget as a whole. The plan of the administration included work to reduce the mortality and morbidity in children and in adults, and the protection of pregnant women. The physicians serving the Queen Elizabeth Fund centered their efforts more on social and prophylactic medicine for combating epidemics than on curative medicine. Philanthropic and social societies, special villages for leprosy patients, dispensaries, maternities, prenatal consultation centers, and consultation centers for nursing mothers were some of the fields the development of which devolved on the personnel. Of 384,799 natives in the villages, 327,679 were visited by the physicians. It is especially pleasing to note the efforts made to protect the race, from the onset of maternity to the birth of the child. In the Lower Congo, the consultation centers for nursing mothers are making constant progress. Furthermore, the native women are presenting themselves more and more at the prenatal consultation centers. In the rural regions about Kangu, a maternity has been annexed to the hospital. Nurseries have been created to care for young orphan children.

The fund assists in the hygiene of the villages, for their relocation and regrouping, for the renewal of trails, for the upkeep of the main caravan roads, for fishing places, and for the construction of camping places. It provides also free medicaments in regions where economic conditions are bad.

The rôle of a sanitary unit of the Queen Elizabeth Fund consists in raising the standards of health among the natives

and in aiding the native communities. Its medical aid is based on a rapid organization, and after the introduction of general health measures in a given district the maintenance of the acquired agencies is left to the regular health service in the colony.

RIO DE JANEIRO

(From Our Regular Correspondent)

June 15, 1933.

Lymphogranulomatosis

Dr. Clovis Corrêa reports in the *Revista de gynecologia e de obstetricia*, May, 1932, observations on twenty-five cases of chronic hypertrophic ulcer of the vulva, which was usually found on the labia. The anorectal region was frequently affected, always resulting in stricture of the rectum. The ulcers had punched-out, undermined borders and an irregular bottom. Often there were long fistulous tracts, edema and infiltration of the labia majora resembling elephantiasis. The anal sphincter may be destroyed. The etiology is much discussed. Race does not seem to be important. Among thirty-three patients Corrêa has found sixteen white, eleven mulatto and six Negro women. He questions whether his cases were not a form of lymphogranulomatosis. Histopathologic examination has revealed elements similar to those of the primary lesion of Nicolas-Favre disease. Frei's reaction by intradermic injection of diluted pus of the bubo of lymphogranulomatosis was positive. The initial venereal chancre must have passed unnoticed. It may be admitted that lymphogranulomatosis is connected with the appearance of chronic anorectovulvar ulcer.

With sodium iodide intravenously Corrêa obtained at least a great improvement. He recommends this medication, associated with the use of the thermocautery.

Alcoholism and the Endocrine Glands

In its April, 1932, issue, the *Jornal dos clinicos* of Rio de Janeiro publishes a paper by Dr. J. Moreira Fonseca in which the author reviews the literature on the action of alcohol on the endocrine glands and his own research on the suprarenals in the cirrhosis of Laënnec. Acute alcoholism stimulates the thyroid to the point of producing exophthalmic goiter, and chronic alcoholism diminishes hypothyroidism (Pende). It produces hypofunction of the hypophysis (Schmiergeld) and deficiency of the suprarenals during grave infections (Giovinì) as well as in cirrhosis. Steatosis of alcoholic origin plays a part in the reaction of the endocrine glands, the histology of which is much disturbed, particularly the testes. The descendants of alcoholic individuals, on account of the diminished functional activity of the glands of internal secretion, suffer from infantilism, myxedema, and so on. Alcoholism is consequently a real cause of endocrine disturbances.

Hypervitaminosis D

Dr. Helion Povoá published a study of hypervitaminosis D in the April, 1932, issue of the *Archivos de medicina* of Rio de Janeiro. The toxic action of vitamin D used in large doses causes a loss of appetite, drop of temperature and weight and progressive diarrhea, followed by cachexia. The animal does not take food or drink and goes into coma; the respiratory movements and the pulse become imperceptible and later stop. Nearly all animals are sensitive to large doses of viosterol, but the macacus is very resistant. The intoxication is characterized by (1) disturbances of the metabolism of fats, especially pronounced in the kidneys; (2) disturbances of the calcium metabolism characterized by calcareous deposits; calcification frequently attacks the middle tunic of the blood vessels, creating an aspect similar to human arteriosclerosis. The pathogenesis of these disturbances has given rise to many discussions. It would, indeed, be strange if a substance as active as vitamin D, which is active in a dose of a fraction of a milligram, did not produce toxic symptoms with high doses.

Marriages

SAMUEL J. McDONALD, JR., Sumter, S. C., to Miss Natalie C. Frederick of Columbia, at Lexington, June 12.

KENNETH NEWTON GOULD, Pine Mountain, Ky., to Miss Elizabeth Barrett of Berea, June 8.

HAMILTON SOUTHWORTH to Miss Katharine Robertson Jones, both of New York, June 30.

LOUIS JOSEPH HALPERN, Chicago, to Miss Gertrude Jenne Epstein of Danville, Ill., June 10.

WALTER H. GILSDORF, New England, N. D., to Miss Esther Anderson of Dickinson, recently.

FRANK CHARLES MORGENROTH to Miss Katherine Rogers, both of Milwaukee, June 17.

JOHN B. JAMES, Page, N. D., to Miss Gena Johnson of Fargo, recently.

VITO J. MEROLA to Miss Madeleine Galardi, both of New York, June 29.

CHARLES S. NOONAN, Cincinnati, to Miss Frances T. Wise, June 20.

LLOYD FRICK KAISER, St. Louis, to Miss Hattie May Jury, June 19.

Deaths

Frederick Henry Baetjer, a pioneer investigator in the therapeutic use of the roentgen ray, and a martyr to research in this field, died, July 17, at his home in Baltimore. In his work, Dr. Baetjer suffered injuries of his hands and eyes which necessitated many operations. He was born in Baltimore, Aug. 7, 1874, studied in the public schools in Winchester, Va., in the Shenandoah Valley Academy, and received his A.B. degree in 1897 and his M.D. in 1901 from Johns Hopkins University, serving his internship at the Johns Hopkins Hospital. The following year he took postgraduate work at the University of Berlin and later became successively assistant and associate in surgery in charge of actinography, associate professor of clinical roentgenology and professor of roentgenology, Johns Hopkins University School of Medicine. He was a member of the Medical and Chirurgical Faculty of Maryland and the American College of Radiology; in 1908, was a delegate to the International Roentgen Ray Congress at Amsterdam, and was a member and, in 1911, president of the American Roentgen Ray Society. Dr. Baetjer was a major in the M. C., U. S. Army, 1917-1919. He was roentgenologist to the Johns Hopkins Hospital and consulting roentgenologist to the Union Memorial and Sinai hospitals, Church Home and Infirmary, Children's Hospital School, and Hospital for Women of Maryland, and was the author of "Injuries and Diseases of Bones and Joints" and co-editor of the "United States Army X-Ray Manual."

Edwin McGinnis * Chicago; Northwestern University Medical School, Chicago, 1904; assistant clinical professor of laryngology and otology, Rush Medical College; secretary of the American Bronchoscopic Society; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological Association and the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; on the staffs of the Chicago Municipal Tuberculosis Sanitarium, Presbyterian Hospital and the Children's Memorial Hospital, the Veterans' Administration Hospital, Hines, and St. Francis' Hospital, Blue Island, Ill.; aged 55; died, July 1, of angina pectoris, in Muskegon, Mich.

Harry Walter Mitchell * Warren, Pa.; University of Vermont College of Medicine, Burlington, 1896; member of the Massachusetts Medical Society, the American Neurological Association, the New England Society of Psychiatry, the Association for Research in Nervous and Mental Diseases and the American Psychopathological Association; member, past president, vice president and secretary-treasurer of the American Psychiatric Association; aged 65; superintendent of the Eastern Maine Insane Hospital, Bangor, 1907-1910, the Danvers (Mass.) State Hospital, 1910-1912, and the Warren State Hospital, 1912-1933, where he died, June 13, of chronic interstitial nephritis.

Willis Fred Harvey, Rushville, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; member of the Illinois State Medical Society; past president and secretary of the Schuyler County Medical Society; served during the World

War; formerly county coroner; aged 63; died, June 18, of chronic myocarditis.

Carl G. Swenson, Chicago; Rush Medical College, Chicago, 1891; an affiliate Fellow of the American Medical Association; associate professor of (extramural) surgery, Northwestern University Medical School; fellow of the American College of Surgeons; veteran of the Spanish-American War; on the staff of the Passavant Memorial Hospital; aged 77; died, July 8, of pneumonia.

Emil Regard, Mansura, La.; Tulane University of Louisiana Medical Department, New Orleans, 1894; member of the Louisiana State Medical Society; formerly bank president; aged 61; died, June 3, at the Baptist Hospital, Alexandria, of acute dilatation of the heart following an operation on the gallbladder.

Clyde Ray Stingily Meridian, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; member of the Mississippi State Medical Association; at one time bacteriologist to the state board of health; formerly on the staff of the Jackson (Miss.) Infirmary; aged 53; died, June 24, of heart disease.

Andrew Joseph Keenan, Philadelphia; Jefferson Medical College of Philadelphia, 1912; member of the Medical Society of the State of Pennsylvania; instructor in laryngology at his alma mater; served during the World War; aged 46, died, June 15, of carcinoma of the lung with metastasis to the brain.

Edward Le Motte Eustice, Kewanee, Ill.; Chicago College of Medicine and Surgery, 1916; member of the Illinois State Medical Society; aged 51; on the staffs of the Kewanee Public Hospital and St. Francis' Hospital, where he died, June 25, of peritonitis, following an operation for appendicitis.

Eugene Patrick Sullivan, Morrison, Ill.; Rush Medical College, Chicago, 1899; member of the Illinois State Medical Society; served during the World War; aged 59; died, June 28, in the Jackson Park Hospital, Chicago, of pneumonia, as the result of injuries received in a fall.

Thomas Murphy Jordan, Raleigh, N. C.; College of Physicians and Surgeons, Baltimore, 1881; member of the Medical Society of the State of North Carolina; formerly on the staff of the State Hospital; aged 76; died, June 29, of heart disease, at Fayetteville.

Pierre Leonce Thibaut * New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1900; veteran of the Spanish-American War; president of the medical staff of the Hotel Dieu Hospital; aged 57; died, June 14, of heart disease.

James McKeon, St. Paul; Bellevue Hospital Medical College, New York, 1889; Minneapolis College of Physicians and Surgeons, 1890; member of the Minnesota State Medical Association; aged 71; died, June 28, of heart disease, at Montgomery, Minn.

Burton Peter Thom * New York; Baltimore Medical College, 1897; consulting physician to hospitals of the department of correction in New York; author of "Syphilis," "Hygeia, or Disease and Evolution" and "Dust to Life"; aged 58; died, May 3.

George Alexander Graham, Kansas City, Mo.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1884; member of the Missouri State Medical Association; aged 73; died, March 23, of diabetes mellitus and arteriosclerosis.

Irby B. May * Columbia, La.; University of the South Medical Department, Sewanee, Tenn., 1906; health officer of Caldwell Parish; died, June 21, in St. Francis Sanitarium, Monroe, of injuries received in an automobile accident.

Lloyd Russell Carson, Bradford, Pa.; Kansas City (Mo.) Medical College, 1905; member of the Medical Society of the State of Pennsylvania; aged 54; was found dead, July 5, in a hotel room at Hiawatha, Ont., of heart disease.

Francis H. Brobst, Reading, Pa.; Jefferson Medical College of Philadelphia, 1888; Hahnemann Medical College and Hospital of Philadelphia, 1889; aged 67; died, June 16, of arteriosclerosis and cerebral hemorrhage.

Louis Rollin Head, Madison, Wis.; Rush Medical College, Chicago, 1885; member of the State Medical Society of Wisconsin; medical director of the Morningside Sanatorium; aged 73; died, June 27, of arteriosclerosis.

Henry L. Wenner * Tiffin, Ohio; Western Reserve University Medical Department, Cleveland, 1882; aged 71; on the staff of the Mercy Hospital, where he died, June 26, as the result of an automobile accident.

William Anderson Lyman, Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1894; member of the Vermont State Medical Society; aged 73; died, April 10, of carcinoma of the gallbladder.

Frederick Augustus Davis, Denver; Harvard University Medical School, Boston, 1891; aged 60; died, March 27, in the Presbyterian Hospital, of obstruction of the bowel, pneumonia and myocarditis.

Alfred Roncovieri, Jr. ☉ San Francisco; University of Pennsylvania School of Medicine, Philadelphia, 1911; aged 46; died, May 16, of coronary sclerosis with infarction and myocarditis.

John Storer, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1889; aged 64; died, May 9, in the Los Angeles County General Hospital, of acute appendicitis and peritonitis.

William Guthrie Wendell ☉ Marmarth, N. D.; University of Pennsylvania School of Medicine, Philadelphia, 1894; aged 73; died, June 1, in Miles City, Mont., of carcinoma of the liver.

William Oscar Lubken, Johnstown, Pa.; Medico-Chirurgical College of Philadelphia, 1901; member of the Medical Society of the State of Pennsylvania; aged 58; died, July 8.

J. Herbert Patten, Bar Harbor, Maine; New York University Medical College, 1886; member of the Maine Medical Association; aged 70; died, May 7, of cerebral hemorrhage.

Stephen Archibald Wilkinson, Chappleau, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1920; served during the World War; aged 46; died suddenly, May 15.

Emmanuel M. Jennings ☉ Menlo, Ga.; Chattanooga (Tenn.) Medical College, 1900; past president of the Chattooga County Medical Society; aged 64; died, June 17, of heart disease.

Corwin G. Warden, Berea, Ohio; University of Wooster Medical Department, Cleveland, 1878; formerly postmaster of Berea; aged 75; died, May 26, of cerebral hemorrhage.

Carl Keller, San Francisco; National University of Arts and Sciences Medical Department, St. Louis, 1912; aged 67; died, May 12, of arteriosclerosis and chronic myocarditis.

David Albert Beard, Tulsa, Okla.; Memphis (Tenn.) Hospital Medical College, 1901; formerly superintendent of public health; aged 56; died suddenly, June 27, of heart disease.

Clayton E. Fawcett, Aurora, Ill.; Hahnemann Medical College and Hospital, Chicago, 1905; aged 55; died, June 22, in the Copley Hospital, of acute myelogenous leukemia.

Fred Elmer Webster, Amherst, Wis.; Rush Medical College, Chicago, 1891; member of the State Medical Society of Wisconsin; aged 70; died, June 3, of diabetes mellitus.

John Cleveland Phillips, Portsmouth, Va.; Maryland Medical College, Baltimore, 1912; aged 48; died, June 9, in the King's Daughters' Hospital, of pneumonia.

William Wilberforce Claybaugh, Grand Junction, Colo.; Rush Medical College, Chicago, 1883; aged 76; died in June, of auricular fibrillation and Raynaud's disease.

William P. Alexander, Cleburne, Texas; Louisville (Ky.) Medical College, 1876; aged 80; died, June 20, of hypostatic pneumonia and carcinoma of the larynx.

William Leander Zuill, Pasadena, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1884; aged 78; died, May 31, of diabetes mellitus.

Elijah Jackson Thornberry, Columbus, N. M.; University of Louisville (Ky.) School of Medicine, 1898; aged 59; died, June 10, of septicaemia.

Emmette Edward Walker ☉ Pamplin, Va.; University College of Medicine, Richmond, 1900; aged 62; died, June 9, of diabetes mellitus.

Hearn M. Adkins, Bowen, W. Va.; American Eclectic Medical College, Cincinnati, 1892; aged 61; died in June, of cerebral hemorrhage.

Harry Converse, Carrollton, Ill.; Missouri Medical College, St. Louis, 1886; aged 68; died suddenly, June 23, of cerebral hemorrhage.

William Wallace Burckhalter, Tunica, La.; Southern Medical College, Atlanta, Ga., 1888; aged 70; died, June 14, of erysipelas.

Coatney R. Walters, Flat Rock, Ind.; Medical College of Indiana, Indianapolis, 1902; aged 54; died, June 20, of myocarditis.

William Edwin Kneale, Akron, Ohio; Cleveland Homeopathic Medical College, 1902; aged 57; died, June 21, of heart disease.

William E. Truesdell, Alexander, Ky.; Medical College of Ohio, Cincinnati, 1895; aged 64; died, May 26, of carcinoma.

Bureau of Investigation

THE NICOTINE CONTENT OF TOBACCO

A Re-Publication of Some Interesting Figures

During the past few months the Bureau of Investigation has received an increasingly large number of inquiries from physicians regarding the nicotine content of various tobacco products, with particular reference to some of those on the market that are sold under the claim that they have had most of the nicotine removed. The American Medical Association's Chemical Laboratory has done no work on this problem, but this department of THE JOURNAL did publish in the issues of August 25, 1928, and September 21, 1929, respectively, rather full abstracts of some work done by the Connecticut Agricultural Experiment Station on the subject. This material appeared originally in *Bulletin 295* and *Bulletin 307*, respectively, issued by the Connecticut Agricultural Experiment Station. The following figures were given in the later (1929) report of the Connecticut chemists. Most of the various brands examined, both processed and ordinary, are arranged in the order of the total nicotine percentage (air-dry basis) given in the report:

PIPE TOBACCO

| (Ordinary) | | (So-Called Denicotinized) | |
|------------------------------|------|---------------------------|------|
| Blue Boar | 1.45 | O-Nie-O | 0.97 |
| Lucky Strike Plug | 1.76 | Carl Henry | 0.98 |
| Prince Albert | 1.82 | Sackett | 0.98 |
| Old English Curve Cut | 1.94 | Dormy (Cestrada) | 2.26 |
| Hudson's Bay Imp. Mixt. | 1.95 | | |
| Gilbert's Mixture | 2.09 | | |
| Tuxedo | 2.22 | | |
| Craven Mixture | 2.84 | | |

CIGARS

| (Ordinary) | | (So-Called Denicotinized) | |
|------------------------------|------|---------------------------|------|
| King Perfectos | 0.91 | Sackett | 0.67 |
| Reyes de Espana | 1.16 | Carl Henry | 0.74 |
| Partagas, Habana | 1.38 | Sano | 0.87 |
| Knickerbocker (Osterweis) .. | 1.76 | Girard | 1.54 |
| Judges Cave | 1.80 | | |

CIGARET'S

| (Ordinary) | | (So-Called Denicotinized) | |
|------------------------------|------|------------------------------|------|
| Condax | 1.06 | Sano | 0.79 |
| Makaroff | 1.21 | Lord Nestor | 0.92 |
| Benson and Hedges | 1.26 | O-Nie-O | 0.94 |
| Egyptian Dieties | 1.28 | Carl Henry | 0.95 |
| Melachrinio | 1.31 | Sackett | 1.03 |
| Pall Mall | 1.38 | Dormy Blue Ribbon Turkish .. | 1.19 |
| Phillip Morris | 1.44 | Cestrada, Virginia | 2.10 |
| Royal Nestor | 1.47 | | |
| Mogul | 1.48 | | |
| Murad | 1.52 | | |
| Helmar | 1.56 | | |
| Rameses II. | 1.73 | | |
| Tareyton | 1.75 | | |
| Lucky Strike | 1.88 | | |
| Marlboro | 1.94 | | |
| Nebo | 1.98 | | |
| Omar | 1.98 | | |
| Mecca | 2.17 | | |
| Old Gold | 2.17 | | |
| Camel | 2.21 | | |
| Capstan Navy Cut | 2.30 | | |
| Sweet Caporal | 2.45 | | |
| Chesterfield | 2.53 | | |
| Fatima | 2.79 | | |
| Richmond Straight Cuts | 2.79 | | |
| Piedmont | 3.11 | | |

Whether these figures represent the total nicotine percentage of the same brands today is not apparent. The probabilities are, however, that there is no wide difference. In this connection, it is to be remembered that there are various factors to be taken into consideration when discussing tobacco and tobacco products as a health problem. One of the most exhaustive and thorough investigations of the subject was that made by the late Dr. W. E. Dixon of the Pharmacological Laboratory at Cambridge, England. It was published in the *British Medical Journal*, October 22, 1927. There were many interesting facts brought out by Dr. Dixon in his article. One was that nicotine, which is usually looked upon as the *bête noire* of the smoker, is by no means the only constituent of the tobacco that is harmful, although it is probably the most important; but

there are, for instance, ammonia gas, pyridine or pyridine derivatives, and carbon monoxide.

Another thing that was brought out in the article was that the amount of nicotine in tobacco is not necessarily any criterion of the amount of nicotine the smoker will get. When tobacco is smoked, part of the nicotine is burnt and a part passes in smoke as free nicotine. The drier the tobacco, the greater the destruction of the nicotine. Dr. Dixon was strongly of the opinion that moist tobacco produces much more serious effects than dry tobacco, the water content of the tobacco, in his opinion, being more harmful to the smoker than the original nicotine.

The amount of nicotine and other volatile substances that reach the smoker also depend on the form in which the tobacco is smoked. A cigaret or slender cigar which is well cooled will yield less nicotine and other volatile substances than a thick cigar. Dr. Dixon pointed out that while Virginia tobacco leaf, from which cigarets are made, often contains twice the amount of nicotine that is present in a Manila cigar, yet when equal weights of cigarets and cigars are smoked, the total cigar smoke contains double the amount of nicotine present in the cigaret smoke. It was also emphasized that in pipe smoking the amount of volatile products, including nicotine, that reached the smoker depends to no small extent on the construction of the pipe. In the long clay pipes of the old "church-warden" type, there is great opportunity for the nicotine to condense, so that the smoke, when it reaches the smoker, may be almost free from that substance.

OYLOFF DRY SHAMPOO

The Commercial Possibilities of Salt Water

Inquiries have been received asking for information on the composition of a preparation known as "Oyloff Dry Shampoo," put out by the Godefroy Manufacturing Company of St. Louis. In an advertisement published in the *Woman's Home Companion* for January, 1933, these claims are made for Oyloff:

"Amazing new liquid makes shampooing quick, easy, right at your dressing table."

"Here is what you have always wanted—a thrilling new way to shampoo your hair in 15 minutes without washing out your wave."

"It's amazing how Oyloff Dry Shampoo removes all oil and dirt, cleans the scalp and reveals the silky luster, beauty and romance of your hair."

"Just apply Oyloff, let it dry, then brush thoroughly. You can see the oil and dirt come tumbling out."

"Try it once and you'll thrill over it, too."

A bottle of Oyloff was purchased on the open market and \$1.05 had to be paid for it. It came in a most modernistic container, characteristic of the present high-hat tendency in the cosmetic trade. The bottle was turned over to the A. M. A. Chemical Laboratory with the request that it be analyzed. The chemists' report follows:

LABORATORY REPORT

"One original bottle of Oyloff (Godefroy's Manufacturing Company, St. Louis, U. S. A.) was submitted to the A. M. A. Chemical Laboratory for examination. The bottle contained 168 cc. (5 fluid ounces) of a light amber-colored liquid, possessing a slight aromatic odor, suggestive of a perfume. The reaction of the mixture to litmus was slightly alkaline.

"Qualitative tests indicated the presence of sodium and chloride. No heavy metals, carbonates, sulphates, alkaloids and soap were found. The specific gravity at 25 C. was found to be 1.148. The residue on evaporation was 20.16 per cent, consisting essentially of a slightly colored crystalline solid with a distinct odor of burnt sugar (caramel).

"From the foregoing tests, it was concluded that Oyloff is essentially a colored aqueous solution of dairy salt (commercial table salt), with a dash of perfume."

From the chemists' report we learn that this "amazing" product that reveals the "romance of your hair" and that will "thrill" you is, essentially, a pinch of salt in five ounces of water—incidentally, the bottle states "net contents, 6 ounces." Paying \$1.05 for five ounces of salt water would seem, under present economic conditions, to furnish a text for a discussion on certain phases of modern business.

Correspondence

RUSSIAN EXPERIENCES WITH LEGALIZED ABORTION

To the Editor:—My attention has been drawn to an editorial in *THE JOURNAL*, February 4, regarding "Russian experiences with legalized abortion as reflected in the first All-Ukrainian Congress of Gynecologists and Obstetricians, meeting in Kiev in May, 1927. May I draw your attention to an article contributed by Dr. J. Leunbach of Copenhagen to the *Saertryk af Ugeskrift for Læger*, 1933, number 13, page 391. He states that only 25 per cent of 6,000 cases of abortion in Kiev were really legal, while 75 per cent were induced outside the hospitals. The material dates from the first five or six years after the legalization of abortion in Russia. The number of women who desired to have their pregnancy interrupted was much greater than the number of beds available in the hospitals. It was therefore necessary to refuse admittance to the majority of the women who applied for a bed. The women who were so refused, as well as those who shrank from presenting themselves to the "commissioners of abortion," had the operation undertaken at home or by a quack and were brought to the hospitals bleeding and suffering from the consequences of infection. As in Russia the women themselves cannot be punished for abortion, they are not afraid of entering a hospital and need not try to conceal the fact that the abortion was provoked artificially.

As Kiev is a city which is comparatively well supplied with hospitals, it is probable that the proportion of interruptions of pregnancy outside hospitals is far higher in the country districts than in Kiev itself. Therefore the great majority of the 423,000 cases that were presented to the congress in May, 1927, were not regular legal abortions but abortions of the same kind as those that are so well known to the hospitals in all other countries. Thus the unfavorable results brought forward throw no light on the danger or absence of danger of legalized abortion carried out by competent surgeons in proper hospitals.

The following information is given by Dr. Madjuginsky, the director of one of the largest abortion clinics in the Soviet Union, who carried out about 30,000 abortions during the year 1930: In the abortion clinics in Moscow, 90,000 abortions were undertaken in 1930, and 140,000 in the two years preceding. There was one casualty for each 20,000 cases. Perforation of the uterus occurred in 0.04 per cent of the cases, but practically never with a fatal issue. Elevation of temperature, mostly slight and transitory, occurred in about 2.3 per cent of the cases. Madjuginsky maintains that psychic disturbances and sterility in consequence of legalized abortion are extremely rare.

The number of abortions was growing continually until 1930-1931, but it is now stationary and only 10 per cent of the treatments are entirely gratuitous. Thus the Russians appear to have abandoned the original principle according to which legal abortion was undertaken only in free beds in hospitals. The right to have an abortion undertaken is now limited only by the conditions that at least six months must have passed since the last abortion and that a thorough medical examination fails to reveal any circumstances that make an abortion inadvisable.

Illegal abortion is now practically nonexistent in the larger cities, where physicians and clinics are sufficiently numerous. But conditions are still far less satisfactory in the country and in out-of-the-way parts of the Soviet Union where there is a shortage of physicians.

Legal abortion is made available in order to suppress illegal abortion. But even legal abortion is not favored, and endeavors are made to prevent its necessity by propagation of contracep-

tive knowledge. On the wall of the waiting room in Dr. Madjuginsky's clinic there are placards with such inscriptions as the following:

"This abortion ought to be the last."

"An undesired pregnancy should be prevented rather than interrupted."

"When you know how to prevent pregnancy, abortion will be unnecessary."

At the congress in Kiev it was emphasized that contraception is the best prophylactic against abortion.

Finally, the well known book of Dr. Krassilnikian is largely based on the data of the congress in Kiev, but this author is a Russian emigrant who has not visited Russia since abortion was made legal.

I think you will agree that the foregoing facts, as presented by Dr. Leunbach, definitely challenge the views put forward by those who have used the reports of the Kiev congress to condemn the legalization of abortion.

NORMAN HAIRE, CH.M., M.B., London, England.

Co-President, World League for Sexual Reform.

"CALCIUM NEED AND CALCIUM UTILIZATION"

To the Editor:—In THE JOURNAL, April 1, Bernheim makes out a rather sad case for the average American diet with respect to calcium. Without trying to detract from proved clinical uses of calcium, I would say that conclusions based on the realms of probability are questionable. Thus, specifically quoting Sherman, she states that "probably a larger proportion of the ordinary dietaries, both of adults and of children, can be improved by enrichment in calcium than in any other one chemical element" and, further, "he believes that a number of weaknesses and increased susceptibilities to infection may be the results of calcium deficiency," although in his original article Sherman says "probably plays a part in a number of weaknesses and increased susceptibilities to infection without being exclusively responsible for any one of them."

The size of the rôle calcium plays in the difficultly appraised human equations of "passable" and "buoyant" health is considerably weakened when it is stated that "a sustaining diet enriched by the addition of calcium and vitamins makes for the difference between 'passable' and 'buoyant' health."

Regarding longevity, Sherman (THE JOURNAL, Nov. 14, 1931, p. 1426) divides the responsibility again: "Vitamin G also appears to contribute to the betterment of longevity induced by Sherman and Campbell through improvement of an already adequate diet." Yet Bernheim gives a rather strong implication that calcium is the chief factor.

An inadequate calcium diet in the histories of 3,998 patients out of 4,000 questioned seems to be at a marked variance with the observations of Sherman and his co-workers in 1910 and 1918. They found the mean of American diets to contain 0.85 Gm. of calcium oxide (quoted from Sollmann's Manual Pharmacology, ed. 3, who in addition states that ordinary diets contain from 0.3 to 4.2 Gm.). Peters and Van Slyke, Sajous and Hundley, and the New and Nonofficial Remedies of 1933 support the contention that "under ordinary conditions the food supplies the body with enough of the salts of calcium to satisfy the needs of the tissues."

Keeping in mind that this discussion deals only with the adult, may it not be a fair question to ask, With a proper childhood diet, has there not been built up enough reserve of calcium to take care of the ordinary vacillating diets which at times may contain little calcium?

The many conditions that have to do with the adequate and proper metabolism of calcium in the body speak more for a well rounded perspective of the American diet. Advertising today has swung the pendulum of calcium therapy to an arc that is

bewildering to a rationalization of its proper uses. Advocating uses of methods that are still in the realms of probabilities is too expensive for the public, especially when dealing with the difficult status quo of health.

CHARLES BARON, M.D., Covington, Ky.

[NOTE.—The letter of Dr. Baron was sent to Dr. Bernheim, who replies:]

To the Editor:—My purpose was to stress the fact that "the existence of optimum conditions in regard to calcium cannot be taken for granted, but that special effort is necessary to assure adequate supply and utilization of this element." There was no intention, as implied by the correspondent, to ascribe to calcium the chief rôle in the maintenance of health or in the prolongation of life.

Calcium, of course, is necessary to life, but so admittedly are numerous other elements and substances. Not one of these plays its rôle alone. True evaluation of function, so far as it is possible, comes only after study of the various factors, both separately and in their interrelationships. It is never a simple problem.

Dr. Baron's observation that "conclusions based on the realms of probability are questionable" is undeniably true. The conclusions in question, however, are based on acceptable evidence, despite the word "probably," twice used by Sherman in his comments on the rôle of calcium in the diet. These conclusions are that:

1. The average American dietary is poor in calcium content.
2. The calcium requirement is 1 Gm. of calcium oxide a day.
3. General health is improved and recovery from disease aided when the optimum calcium supply and utilization are assured.
4. Without milk or cheese in the diet, it is difficult to obtain the needed calcium through food alone.
5. Utilization of calcium is ineffectual, even with a sufficient calcium intake, unless the factors that control the absorption of calcium are also adequate.

Your correspondent is of the opinion that the average American dietary is not calcium poor. He cites Sherman's figure, from Sollmann's Manual of Pharmacology, which gives 0.85 Gm. of calcium oxide as the mean of American diets, but this is incorrect. Sherman himself states it to be 0.45 Gm. of calcium, or 0.63 Gm. of calcium oxide. The further statement that ordinary diets contain as much as 4.2 Gm. is surely erroneous, for even the highest calcium diet known, that of the Finns, contains no more than 2.5 Gm. a day. It is simple for any one to calculate the calcium content of the ordinary diet. In most instances it will be found to be not only deficient but markedly so, if 1 Gm. of calcium oxide is accepted as the desired amount. Sherman says "Both the published and the unpublished observations of my own laboratory . . . and McCollum's experiments seem to lead to an even higher estimate of the optimal calcium intake. While fully recognizing that the experimental evidence is in some respects conflicting and that there is still some divergence of opinion among investigators, one should, I think, conclude that after much study of vitamin D the importance of liberal calcium intake is more fully established than it has appeared to be at any previous time."

To the question of "the size of the rôle" played by calcium "in the difficultly appraised human equations of 'passable' and 'buoyant' health," my answer is that on the addition of calcium to diets adequate in everything but that element there is to be noted an improvement, often dramatic in character, and warranting the statement that a condition of passable health has been transformed into one of buoyancy. This, however, does not imply that calcium would be thus effectual without the other factors essential to an optimum state of health.

Comment is made that there is "marked variance" between the calcium-deficient diets of more than 4,000 patients in the New York Hospital and Sherman's standard for the ordinary

diet (incorrectly quoted as 0.85 Gm.). This comparison, irrespective of the figures, has scant validity, since Sherman's observations apply to the general population, and mine to sick people in the hospital.

The question is asked whether "with a proper childhood diet there has not been built up enough reserve of calcium to take care of the ordinary vacillating diets which at times may contain little calcium." Apparently with "a proper diet" there is built up a reserve of calcium (mostly in the bones), which seemingly well supplies the needed amount of calcium lacking, not merely "at times," but most of the time, in the "ordinary vacillating diets." This reserve may be drawn on for considerable periods of time—even for two to three decades in many cases—without obvious ill effects, but there is suggestive evidence that this reserve calcium is in reality a substitute form and different from that absorbed from the food. Actual proof that this is so awaits the development of a method for measuring the three forms of calcium in the blood. At any rate, in view of what holds elsewhere in the body economy, it is reasonable to assume that undesirable and even unsafe conditions may be created when there is too steady a call on reserve supplies or forces.

It is not quite clear what the correspondent means by his concluding contention: "advocating uses of methods that are still in the realms of probabilities is too expensive for the public, especially when dealing with the difficult status quo of health." Surely it cannot reasonably be claimed that a diet sufficient in milk and vitamins is an expensive recommendation to the public.

Finally, when the correspondent states that "advertising today has swung the pendulum of calcium therapy to an arc that is bewildering to a proper rationalization of its proper uses" he seems to imply that I have added fuel to the fire. I think, on the contrary, that my statement "scant attention, however, has been given to calcium therapy by means of diet, a method that yields surprisingly satisfactory results" lends no support to advertising.

ALICE R. BERNHEIM, M.D., New York.

DIAGNOSIS AND TREATMENT OF ADDISON'S DISEASE

To the Editor:—The recent article by myself and my co-workers on the "Diagnosis and Treatment of Addison's Disease," which appeared in THE JOURNAL, June 10, should have described in detail, and not merely by citation, the work of Dr. R. F. Loeb and his co-workers in New York, on the general influence of the suprarenal glands on sodium metabolism. The low concentration of sodium in the blood serum of patients during the crisis of Addison's disease was reported last year by Loeb in *Science* (76:420 [Nov. 4] 1932). Dr. Loeb subsequently observed a patient with Addison's disease who recovered rapidly from an acute crisis with sodium chloride therapy alone. The subsequent appearance of edema caused this patient to be given a salt-poor diet. She promptly showed symptoms of insufficiency, from which she was again relieved by the use of salt alone. A description of this case, together with studies of the characteristic changes in the plasma electrolyte structure, particularly sodium, appeared in Loeb's article in the *Proceedings of the Society for Experimental Biology and Medicine* (30:808 [March] 1933). That increased urinary loss of sodium occurs during the addisonian crisis is rendered highly probable from the demonstration by Loeb and his co-workers that such urinary losses follow suprarenalectomy in dogs (*J. Exper. Med.* 57:775 [May] 1933). Credit for the conception of sodium deficit in suprarenal insufficiency and in Addison's disease belongs solely to Dr. Loeb, who bases on it a theory that regulation of sodium metabolism is one important function of the suprarenal glands. Our studies on the

effect of salt withdrawal from patients, which were designed to test the value of this procedure as a diagnostic method, were made during the months of February and March 1933 and constitute a confirmation of Loeb's clinical study. No analyses for sodium were made by us either for diagnostic or for therapeutic reasons until after Dr. Loeb's studies were completed. I greatly regret that our paper failed to give proper distinction to this work, which I regard as one of the most important contributions to the solution of the problem of suprarenal cortical function that has yet been made.

GEORGE A. HARROP, M.D.

Johns Hopkins Hospital, Baltimore.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POLLEN TESTS IN MILWAUKEE AREA— DESENSITIZATION

To the Editor:—What pollens should be suspected as causative factors in hay fever occurring from August to frost in the region of Milwaukee? If sensitivity to one or several pollens is determined by dermal tests: (a) When is it best to desensitize? (b) How is desensitization done? (c) Does the patient remain desensitized or must desensitization be repeated every year?

BERNARD OVERHILL, M.D., Milwaukee.

ANSWER.—During the time mentioned, the pollen content of the air in Milwaukee, as revealed by pollen slides exposed by the United States Weather Bureau, is 98 per cent ragweed. Short ragweed is most common in Milwaukee, but along creeks and about the lakes west of the city there is plenty of giant ragweed. Possible but unlikely offenders during August and September in Milwaukee are pigweed (*Amaranthus retroflexus*), cocklebur (*Xanthium commune*), lamb's quarter (*Chenopodium album*), Russian thistle (*Salsola pestifer*) and annual sage (*Artemisia annua*). To be affected by these pollens, one would necessarily have to live immediately adjacent to large acreages of the plants or engage in some unusual occupation that would expose him to the pollens, as they are not found in toxic quantities in the upper air in the city.

(a) Desensitization may be begun at any time during June or July, preferably about July 1. This gives time to raise the tolerance to a safe level before the ragweed season.

(b) Tolerance to pollen is obtained by a graduated series of doses of extract of the pollen or pollens to which the patient is sensitive—in this case, short ragweed and giant ragweed. The initial doses must be very small, 10 pollen units or less. The rate of increase of the actual size of each subsequent dose depends on the reaction of the patient to the injections. The following is a typical schedule:

| | | | |
|-------------|-----------|--------------|-------------|
| Dose 1..... | 10 units | Dose 9..... | 1,000 units |
| Dose 2..... | 20 units | Dose 10..... | 1,500 units |
| Dose 3..... | 40 units | Dose 11..... | 2,000 units |
| Dose 4..... | 70 units | Dose 12..... | 3,000 units |
| Dose 5..... | 100 units | Dose 13..... | 4,000 units |
| Dose 6..... | 200 units | Dose 14..... | 5,000 units |
| Dose 7..... | 400 units | Dose 15..... | 5,000 units |
| Dose 8..... | 700 units | | |

The maximum dose is really the protective dose and it is most important that this should be administered just prior to the time of heaviest local atmospheric pollen contamination. Ragweed pollen incidence is usually heaviest in Milwaukee about September 1. The exact date varies according to weather conditions. Maximum pollen dosage should be given in your vicinity about August 25. Most allergists supplement this graduated series of doses with several doses during the season, in an effort to retain the tolerance. The coseasonal doses are sometimes as large as the maximum dose; at other times considerably less, depending on the reaction of the patient. Books to consult are:

Duke, W. W.: Allergy, Asthma, Hay Fever, Urticaria and Allied Manifestations of Reactions, St. Louis, C. V. Mosby Company, 1926.
Balyeat, R. M.: Allergic Diseases—Their Diagnosis and Treatment, Philadelphia, F. A. Davis Company, 1931.
Rackemann, F. M.: Clinical Allergy, New York, Macmillan Company, 1931.
Asthma and Hay Fever in Theory and Practice: Part 1, Hypersensitivity, Anaphylaxis, Allergy, by A. F. Coca; Part 2, Asthma, by Matthew Walzer; Part 3, Hay Fever, by A. A. Thommen; Springfield, Ill., Charles C. Thomas, 1931.

(c) Tolerance to pollen usually remains at a high level for only a short time. It is necessary to repeat the treatment each year unless it is thought best to sustain the tolerance throughout the year with doses conveniently spaced. The so-called perennial method of treatment is described by Vaughan (*THE JOURNAL*, July 11, 1931, p. 90).

EFFECTS OF CAMPHORATED OIL BY MOUTH

To the Editor:—What would be the effect of 2 ounces (60 cc.) of camphorated oil taken internally? Kindly omit name.

M.D., West Virginia.

ANSWER.—The probabilities are that emesis would occur, which might rid the patient of a considerable portion of the otherwise possibly fatal dose. Severe abdominal pain, flushing of the face, and a feeling of warmth all over the body, headache, dizziness, disturbance of vision, mental excitement, impulsive movements and anuria might be followed by delirium, epileptiform convulsions, coma, collapse with pallor of the surface, and death from paralysis of the respiratory center. If the patient recovers, strangury and albuminuria as well as persistent gastric disturbance might delay recovery for days or weeks.

"DIABESAN" ALIAS "FERMOGEN"

To the Editor:—Will you kindly send me whatever information you have available concerning the product "Fermogen" (literature enclosed), which is alleged to be an oral preparation for the relief of diabetes. Please omit name or initials.

M.D., New Jersey.

ANSWER.—As long ago as 1925 the Council published a report on "Diabesan," a preparation stated to contain "the trypsin of dead yeast cells" and claimed to be "indicated in all cases of diabetes and glycosuria." The evidence for the value of this dried yeast preparation appeared to consist solely of a paper written by one A. H. Werner, the president of the Solosan Company, which exploited "Diabesan." Werner has a long record in the files of the Bureau of Investigation of the American Medical Association as a "medical authority" of highly dubious antecedents and equipment. The Council found the claims for Diabesan to be unsupported by acceptable evidence and not in harmony with accepted facts and pointed out that there is no evidence that trypsin—or a preparation such as Diabesan, said to contain it—has any value in the treatment of diabetes.

In the advertising circular sent by our correspondent, the "directions" and many of the testimonial letters for "Fermogen" are word for word the same as those contained in an advertising circular for Diabesan, except that the name "Diabesan" is replaced by "Fermogen." Further, it is brought out that the president of the Sano Laboratories, Inc., which markets Fermogen, is none other than one A. H. Werner. The conclusion that "Fermogen" is only "Diabesan" under another name appears so obvious as to need no further comment.

BUERGER'S AND RAYNAUD'S DISEASES

To the Editor:—Please explain briefly the most important points in the differential diagnosis of Buerger's and Raynaud's disease. The works on surgery available to me are of but little help in the matter. What is considered now the best form of treatment for a mild case of Raynaud's disease? An operative procedure has been discussed with the patient by a surgeon to whom he was referred, but the patient, a mechanic, aged 33, does not look favorably toward any operative procedure. Is physical therapy of value in a mild or moderately advanced case of Raynaud's disease? Please omit name and address.

M.D., Virginia.

ANSWER.—Little difficulty is encountered in differentiating Raynaud's and Buerger's disease in their advanced stages. Only in the beginning should there be any difficulty. In the differential diagnosis of these two diseases the sex of the patient is of paramount importance, Raynaud's disease occurring almost exclusively in the female and Buerger's disease occurring almost exclusively in the male. The onset of Raynaud's disease occurs most frequently in the winter months and is characterized by pain or abnormal fatigue in the perineal anterior tibial muscles or the arch of the foot. The symptoms are usually first ascribed to either flatfoot or rheumatism. Somewhat later, intermittent claudication or muscular cramp is brought on by uninterrupted exercise. It is readily relieved by rest. Still later, pain may be present even at rest. Superficial phlebitis commonly precedes or accompanies the early stage of the disease. Rubor appears well on in the course of the disease, sloughing or gangrene in the end stage. Although red, the feet are cold and on elevation develop undue pallor.

The obliteration in thrombo-angiitis is organic in character, leading to decreased pulsation in the peripheral vessels, par-

ticularly the dorsalis pedis. Vasospasm or angiospasm of a functional nature is sometimes superimposed on this organic occlusion. It is frequent in Jews and in excessive smokers in a large proportion of cases. From the standpoint of treatment the condition is benefited by vascular postural exercises, control of walking, and the use of vaccines and of warmth. The success of surgical procedures depends on the extent of the functional element superimposed on organic occlusion, sympathetic ganglionectomy being the operation of choice.

Raynaud's disease is much more frequent in the hands than in the feet and is characterized by a peripheral cyanosis coming on with exposure to cold. Continued or extreme exposure leads to blanching or to rubor, the parts exhibiting the two or three color phase changes. Pulsation in the vessel is usually readily felt. Involvement tends to be symmetrical. The patient is usually well in warm weather. Attacks of severe pain are precipitated by cold. Gangrene is lacking except in the end stages.

In Raynaud's disease the angiospasm is chiefly functional in character, true organic occlusion being absent. Raynaud's disease gives little trouble in warm weather and when cold is avoided. Physical therapy, especially in the form of contrast baths, may prove helpful. Contrast baths consist of immersion of the part, hands or feet, in warm water, from 100 to 110 F., for thirty seconds; cold water, from 40 to 50 F., for fifteen seconds; hot water for fifteen seconds; cold water for fifteen seconds; hot water for thirty seconds. Raynaud's disease of the lower extremities can usually be cured by appropriate surgery, bilateral sympathetic ganglionectomy of the second, third and fourth lumbar sympathetics; and that of the upper extremities helped in the majority of cases by sympathetic ganglionectomy of the upper thoracic ganglions.

As the patient in question is a man, the odds are strongly in favor of thrombo-angiitis as the cause of his symptoms, particularly if the involvement is the most marked in the lower extremities.

TREATMENT OF SYPHILIS

To the Editor:—Four and one-half years ago, at the age of 28, a patient contracted a syphilitic infection which was not diagnosed until two months after joint pains and lymphadenitis began. The Wassermann reaction was four plus; there was no visible chancre. He began treatment at once but developed a severe neuritis of the extremities after the ninth dose of neoarsphenamine (0.9 Gm. each at five day intervals). One month later the Wassermann reaction was two plus. Fifteen doses of bismuth potassium tartrate (0.2 Gm.) were given intramuscularly and after a month's rest the blood and spinal fluid Wassermann reactions were negative. Since that time and mostly within the first two years he has received the following (total for all treatment received): neoarsphenamine, nine doses, 0.9 Gm. before the neuritis; mercuric cyanide, twenty-four doses intravenously; bismuth compounds, fifty-nine doses. The blood Wassermann reaction has been observed every six months and has always been reported negative. He has had no symptoms of syphilis since shortly after treatment was begun. The peripheral neuritis has cleared up, except for an occasional tingling of the toes. The knee jerks, which were lost with the onset of the neuritis, were sluggish until six or eight months ago, when they became normally active. Please advise me on the following points: 1. Is it safe, in the presence of a negative physical examination, negative blood Wassermann reactions and no symptoms, to wait for some indication before giving further treatment? 2. Do you think it safe to give this patient preparations containing arsenic? 3. Can he marry with a reasonable assurance that he will not become a burden to his family as a result of the infection? 4. If further treatment is indicated, please outline the course. Please omit name and address.

M.D., Texas.

ANSWER.—1. Considering the total amount and duration of the treatment which the patient has so far had, it is probably safe to wait for some indication before giving him further treatment. Before entering on a long rest period, however, the spinal fluid should be retested. If it is negative, treatment may be discontinued. The patient should be told that his future safety depends on his cooperation in periodic reexaminations. The blood Wassermann test should be made every six months and he should have a complete physical examination yearly, with particular emphasis on the cardiovascular and central nervous system. Treatment need not be resumed unless the patient develops lesions or a positive blood Wassermann reaction.

2. The use of further trivalent preparations of the arsphenamine group had better be avoided in view of the previous peripheral neuritis.

3. The question of marriage hinges on the patient's potential infectiousness for his marital partner, on the possibility of the birth of a syphilitic child, and on the possibility that he may become incapacitated or die as a result of his syphilitic infection at an earlier age than would otherwise be the case. The result

of potential infection to his marital partner is probably negligible in view of the duration of the patient's illness and the amount of his previous treatment. However, his fiancée should be told of the fact that he has had syphilis and instructed that, if she becomes pregnant, a blood Wassermann test should be made several times during the course of her pregnancy. There is an increased liability that any syphilitic patient, no matter how well treated, may become a burden to his family. The actual, as compared to the expected, mortality rate among well treated syphilitic patients, as compared with normal individuals, is as 150 to 100. This added liability should be explained to the fiancée, and the decision as to whether or not she cares to accept the risk should be left to her.

4. No further treatment is indicated unless there is evidence of relapse or progression. Its character cannot be outlined in advance of the potential relapse.

FLAT FEET

To the Editor:—As school physician I am anxious to examine the children entering school, for flat feet. Can you tell me whether there is an instrument that is used for this purpose which does not stain the child's feet and if so where it can be obtained? Some schools use a preparation of bluing or mercurochrome but both of these stain the feet and are messy to use.

P. RALPH McFEELY, M.D., Bogota, N. J.

ANSWER.—A method that is satisfactory is the use of a box with a glass top and a mirror inside, set at an angle so that, when the child stands on the glass and the examiner stands in front of the box, the imprint of the foot is reflected from the mirror to the examiner's eye.

Many years ago, Dr. A. H. Freiberg of Cincinnati recommended the use of ferric chloride painted on the foot and tannic acid painted on the recording paper. When the two chemicals meet, prussian blue is formed and a good record obtained.

More recently Miss Helen King of Detroit (*Am. J. Dis. Child.* 43:89 [Jan.] 1932) outlined a simple method consisting of a platform to stand on, after india ink had been painted on the child's foot. King devised a method of recording children's footprints in both the walking and the standing position. It consists in the use of Flak Finger Print ink and a board walk equipped with wrapping paper. All details of the sole of the foot and toes in the weight-bearing position are shown. Photographs of the strips measuring $3\frac{1}{2}$ by $4\frac{1}{2}$ inches are kept in a file as part of the record of the child's physical growth. Prints recorded in this manner at intervals of about six months show the growth and development of the foot, changes in gait, position, and the results of corrective exercises in cases of weak or pronated feet.

Inspection is not the only means of obtaining information but it is an important one. Direct inspection of the weight-bearing foot from the front, back and side affords much information.

FORMULA FOR CROWE'S MEDIUM

To the Editor:—Will you please send me the formula for Crowe's medium for growing streptococci in its treatment of chronic rheumatic diseases as found in his book "Bacteriology and Surgery of Chronic Arthritis and Rheumatism."

M.D., Chicago.

ANSWER.—The reference is Crowe, H. W.: Bacteriology and Surgery of Chronic Arthritis and Rheumatism, Oxford Medical Publications, 1927.

Bullock's blood must be obtained in as sterile a fashion as possible by being caught direct in a large sterile vessel. The blood is whipped until coagulation is complete, and 750 cc. is strained through fine muslin into a 2 liter flask. The flask is placed in a water bath and raised to a temperature of 50 C. Then 250 cc. of melted trypsin agar, 1.5 per cent, together with 10 Gm. of dextrose, is cooled to 50 C. and thoroughly mixed with the blood. The whole is then poured into sterile plates through a sterilized funnel and tubing. The plates are filled to a depth of at least a quarter of an inch. The lids of the plates contain a layer of blotting paper so that the moisture which collects from steaming may be absorbed. Since even when cooled the medium is not solid, the plates must be moved with extreme care. They are placed on shelves in an iron stand (incubator shelves will do). The stand can be bodily lifted in and out of a large steamer. The steamer has a conical lid of the Koch type, so that the water of condensation runs down the sides of the vessel instead of falling on to the plates. The preliminary heating must be done with great care. At the first, the temperature is raised to 60 C. and kept there for at least two hours in order that any air dissolved in the medium may be discharged. Otherwise bubbles will result. After two hours, the temperature is raised to 80 C. for another half hour. Then the next two or three days the temperature is raised again to between 80 and 90 C. for half an hour. It is important that the boiling point should not be reached or the medium will be ruined by bubbles. When sterilizing is complete, the plates are dried off in the incubator, wrapped in paper, and stored away in an air-tight box. The appearance of the finished medium must be dark chocolate color and very glossy.

VARIATIONS IN BLOOD PRESSURE OF ARMS AND LEGS

To the Editor:—I recently examined a man, aged 51, with a history of rheumatic fever at 9 years and knowledge of a heart lesion for the past fifteen years, a physician telling him of the condition. Physical examination revealed evidence of an aortic regurgitation. The blood pressure was: left arm, 132/70; left thigh, 168/74; right arm, 128/64; right thigh, 172/80. The point I am especially interested in is the cause for the difference in the pressure in the upper and lower extremities. I understand that the systolic pressure in aortic regurgitation is usually higher in the lower extremities, varying from 50 to 80 mm. (Hill and Holtzman). I do not have access to literature on this subject. Please omit name.

M.D., North Dakota.

ANSWER.—Hill, Flack and Holtzman (*Heart* 1:73, 1909) stated that normally there is an increase of several millimeters in systolic pressure in the legs over that in the arms, as the result of differences in hydrostatic pressure, and that in subjects suffering from aortic insufficiency the pressure taken in the recumbent position is from 20 to 95 mm. higher in the arteries of the leg than in the brachial artery. In febrile conditions or when the legs are immersed in hot water this difference is much less. Hill and Rowlands (*Heart* 3:218 [Feb. 8] 1912) and Rolleston (*Heart* 4:83 [Nov. 2] 1912) have verified this statement.

Mention of this fact is made by Vaquez (*Diseases of the Heart*, 1924, translated by George Lardlow) by George Hermann (*Oxford System of Medicine* 2, No. 2, p. 492 [52]) and by T. F. Reilly (*Tice: System of Medicine* 6:106). No real explanation is given for this except that the difference in pressure is due to differences in hydrostatic pressure.

FURUNCULOSIS OF AUDITORY CANAL

To the Editor:—A woman, aged 24, five weeks ago had pain in the left ear, so severe that she had been kept awake for four nights. On examination, I found the external meatal canal extremely tender on manipulation, reddened, and bulged in various portions. After twenty-four hours of expectant treatment, a competent aural specialist examined the ear and concurred in the diagnosis of furunculosis. The canal was incised under ethyl chloride general anesthesia, after which the patient experienced relief and was able to get some rest. Since then, she has been treated with almost daily packings of one of the following: creasatin solution, diluted Burrow's solution, or 10 per cent sulphated bitumen in glycerin. Only the first named seems to give her relief. Occasionally there is a small amount of pus on the removed packing. In addition, she has been given four injections of combined staphylococcus and streptococcus vaccine, and following this, several injections of a foreign protein (Activin). Several urinalyses, a blood Wassermann test and a blood sugar and nonprotein nitrogen test all give normal results. I have been unable, with the foregoing methods, to clear up the infection, the canal still appearing inflamed and the patient having occasional bouts of pain. Kindly inform me as to the outlook for early cure, and any further suggestions on the treatment. Please omit name and address.

M.D., New York.

ANSWER.—While diabetes is often a cause of furunculosis, the finding of a normal blood sugar would probably exclude this factor. The patient should be watched, however, and repeated examinations should be made. It is sometimes better not to incise the furuncles but to insert in the canal a gauze packing saturated in 1 per cent trinitrophenol or 1 per cent silver nitrate, leaving the packing in place from twenty-four to forty-eight hours, and then replacing. The application of ultraviolet radiation or x-rays to the external auditory meatus is often of considerable value.

ANTITYPHOID VACCINATION

To the Editor:—I have a patient with typhoid, and it has been almost five years since I have taken any typhoid vaccine; so I began the immunizing dose, March 20, using H. K. Mulford's vaccine. Only slight reaction followed the first dose. One week later I took the second dose and this was followed by a severe reaction. It was given subcutaneously over the left deltoid. Two hours later I had a severe chill, which lasted from thirty to forty-five minutes, hyperpyrexia, severe pains, nausea and vomiting. On the second day the severe headache and fever continued. Today, the third day, there is no fever but I feel quite sick. I am not familiar with such reactions from typhoid vaccine. I have taken it many times and have given it considerably but have never seen a reaction so severe as the one described, except when given intravenously as foreign protein. I once gave a patient a second dose on the same day and he had a similar experience. Should I take the third dose? I want to immunize myself but don't want to undergo the recent experience again. Possibly another product would be more satisfactory. What dose should be used in immunizing a child, aged 5 years, against typhoid? Please omit name.

M.D., Mississippi.

ANSWER.—Since the correspondent has had typhoid vaccine "many times," the last time less than five years ago, it appears reasonably safe to conclude that adequate immunity is present. The sharpness of the reaction to the second dose supports this idea, and accordingly the third injection had better be omitted. In case a third injection is ventured, special care must be

taken to avoid injecting any vaccine into the muscle or veins. For a child, weighing say 60 pounds (27 Kg.), not more than one-half the adult doses of typhoid vaccine may be given. If the child weighs less than 60 pounds, the dose should be adjusted to the weight as compared with the average adult weight.

CHEMOTHERAPEUTIC INDEX—NEOARSPHENAMINE CLAIMS

To the Editor:—Various manufacturers of neoarsphenamine claim advantages for their particular brand on the basis of what is termed a chemotherapeutic index. Would you kindly explain the meaning of this index? Also would you give the best opinions of pharmacologists and syphilologists as to whether a brand with a high chemotherapeutic index really possesses any advantage of therapeutic efficiency in the treatment of syphilis?

LUCAS W. EMPEY, M.D., Roseville, Calif.

ANSWER.—Chemotherapeutic index is a term proposed by Ehrlich to express the ratio between toxicity for the host and toxicity for the infecting parasites, viz.:

$$\frac{\text{Minimal Tolerated Dose per Kilogram}}{\text{Minimal Curative Dose per Kilogram}} = \text{Chemotherapeutic Index}$$

The chemotherapeutic index must of necessity be established on laboratory animals and with strains of micro-organisms to which the particular animals used are susceptible (usually rats infected with trypanosomes). The toxicity of arsphenamine compounds varies greatly for different species of animals and for different strains of organisms; other complicating factors also modify the result. Consequently, the chemotherapeutic index is not an adequate indicator of efficacy in clinical syphilis. The Council maintains that no single accepted brand of arsphenamine or neoarsphenamine is superior to other accepted brands when considered from the point of view of clinical evidence.

REMOVAL OF SUPERFLUOUS HAIR

To the Editor:—Would you kindly give me your opinion as to the best procedure in removing superfluous hair from the face? The patient is a woman, aged 22, and has quite a heavy growth of hair on the chin and both sides of the face. Six months ago she took a number of treatments (electric needle) which, instead of removing the hair, merely aggravated the condition. Last November a course of roentgen treatments was begun, and, according to the suggestion of a good authority on the subject, one-fourth skin unit at intervals of three days was given five consecutive times. From five to eight one-fourth units was the dosage suggested but at the same time caution was advised against a possible telangiectasia. For this reason, only five treatments were given, with the result that there was no visible effect on the growth. Kindly outline a technic that is both effective and safe. Please omit name.

M.D., North Dakota.

ANSWER.—Electrolysis, when properly done, is the only safe method of removing superfluous hair. Roentgen therapy has been abandoned by all reputable roentgenologists and dermatologists. There is no technic that is both effective and safe. Atrophy and telangiectasia are the usual sequel to an amount of x-rays necessary to produce permanent depilation. The physician who undertakes the treatment of hypertrichosis with x-rays should have a clear understanding of the risk involved and the medicolegal possibilities.

USE OF SODIUM AMYTAL BY RECTUM IN LABOR

To the Editor:—I have recently lost a baby following delivery with 9 grains (0.6 Gm.) of sodium amytal given rectally about two hours before delivery. This is my first death with sodium amytal in obstetrics and I am wondering whether this might be attributed to the quinine that was given by mouth at the same time as the amytal. The mother had quite a severe respiratory reaction immediately following delivery and the baby could not be resuscitated. I would appreciate any information you may have on this. Please omit name.

M.D., Missouri.

ANSWER.—In spite of the fact that two drugs were given during labor, the fetal death may, of course, have had little or nothing to do with either of these drugs. Sodium amytal is being used considerably and, while it produces excitement in a large proportion of women and apnea in many babies, 0.6 Gm. given by rectum would hardly produce fetal death. Many patients have received from 15 to 30 grains (1 to 2 Gm.) of sodium amytal without apparent harm to the baby. Quinine, on the other hand, has been held responsible for a few fetal deaths. Dilling and Gemmell (*J. Obst. & Gynec. Brit. Emp.* 36:352, 1929) say: "In a series of 765 patients in whom quinine was used for induction of labor, the drug may have been responsible for eight stillbirths (1.04 per cent)." De Lee (*The Year Book of Obstetrics and Gynecology*, by J. B. De Lee and J. P. Greenhill, 1930, p. 313) says: "Quinine should not be used in large doses during or before labor. We have had several fetal deaths and two maternal deaths from even moderate dosages."

TOXICITY OF ETHYL VALERATE

To the Editor:—How toxic is ethyl valerate? I have had several cases of exposure in which the only complaint was impotence. These occurred in young vigorous males, after very little contact. I understand that ethyl valerate is a by-product formed in the manufacture of ethyl acetate and similar ethyl compounds.

F. F. BOYS, M.D., East Chicago, Ind.

ANSWER.—Little is known about the industrial toxicity of ethyl valerate. The National Dispensary describes ethyl valerate and its therapeutic use. The fact that the dose is limited to one or two drops a few times daily implies that the substance possesses potent properties. Its medical use is limited to spasmodic conditions, including some forms of asthma. A lesser use is as a sedative. The substance finds use in small quantities in beverages and confectionery as a flavoring extract simulating apple.

It is anticipated that industrial exposure will lead to lowered tonicity of various muscular tissues and lessened activity of various body functions.

The suggestion has been made that digestive disturbances may be expected to arise after the taking of ethyl valerate. It is believed that this chemical is eliminated through the kidneys unchanged.

SUSCEPTIBILITY TO TOXIN-ANTITOXIN

To the Editor:—A boy, 8 years old and in good health, received the Schick test, which was positive. He then was given diphtheria toxin-antitoxin with only mild local reaction, but about a week later complained of malaise and had a temperature of 101 F. daily for several days. No more toxin-antitoxin was given and he then felt able to go to school for several days but again ten days from the first immunizing dose began to complain of nausea, weakness, dizziness and again had a temperature of from 100 to 102, with a pulse rate between 110 and 120. He fainted while on the street, the second day of this illness. Physical examination was essentially negative except for the symptoms mentioned. He has had no previous serious illness. Could the one dose of diphtheria toxin-antitoxin have caused the symptoms so long after, with no heart signs other than rapid pulse this late? Please omit name and address.

M.D., Ohio.

ANSWER.—It is possible that the symptoms may have been caused by the toxin-antitoxin. In especially susceptible persons, minute amounts of various proteins are toxic. The toxin-antitoxin mixture contains, besides the blood serum, also other protein of the broth in which the diphtheria bacilli are grown in producing toxin. Injections of serums and other protein substances are sometimes followed by slight, transient disturbances, such as fever, joint pains and general malaise, and while not corresponding to typical serum reactions are still probably due to the toxic reactions produced by the injected materials and not explained in any other manner.

USE OF ETHER AND ETHYLENE IN ANESTHESIA

To the Editor:—1. What percentage of the leading surgeons and hospitals in the United States are using ethylene and oxygen anesthesia? 2. How is ethylene and oxygen rated as to safety? 3. What percentage of anesthetists are able to keep the patient sufficiently relaxed to permit the surgeon to work without the aid of ether? 4. Why does a patient become blue on ethylene and oxygen and yet not be sufficiently relaxed for the surgeon to work? All these questions apply to surgeons doing major abdominal operations lasting from twenty minutes to two or more hours. Please omit name.

M.D., West Virginia.

ANSWER.—1. It is impossible to state definitely the number of surgeons and hospitals using ethylene, but a recent survey would place the number at about 40 per cent.

2. Anesthetists who have had the largest experience unhesitatingly claim that when ethylene is properly administered it is the safest of all anesthetic agents.

3. It is difficult or impossible to produce good relaxation in abdominal operations with ethylene alone. With liberal premedication and local anesthesia, relaxation will be secured without the addition of ether.

4. Cyanosis will not produce relaxation and, if extreme, may endanger or destroy the life of the patient.

DERMATITIS DUE TO ROTOGRAVURE INKS

To the Editor:—What suggestions have you to offer for the treatment of an acute dermatitis definitely caused by rotogravure inks such as are found in comic sections, rotogravure sections of Sunday papers and certain types of rotogravure found on books and toilet preparation coverings?

R. L. RUTLEDGE, M.D., Alliance, Ohio.

ANSWER.—An acute dermatitis due to rotogravure ink should be treated as an ordinary dermatitis venenata. If the eruption is a moist one, wet dressings of aluminum subacetate solution should first be used, the official 8 per cent solution being diluted with 1 ounce to the pint of water. If the acute eruption has

MEDICAL EDUCATION AND HOSPITALS

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVigne, Juneau.
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. Application should be filed before August 1. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.
AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: Written. Boston, Chicago, Cleveland, New York, Philadelphia, St. Louis and San Francisco, Oct. 28. Oral. New York, Dec. 15-16. Application must be filed before Sept. 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The examinations will be held in various cities of the United States and Canada, Dec. 9. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.
AMERICAN BOARD OF OTOLARYNGOLOGY: Boston, Sept. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.
NEW HAMPSHIRE: Concord, Sept. 14-15. Sec., Dr. Charles Duncan, State House, Concord.
OKLAHOMA: Oklahoma City, Sept. 12-13. Sec., Dr. J. M. Byrum, Mammoth Bldg., Shawnee.
PUERTO RICO: San Juan, Sept. 5. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

Colorado Endorsement Report

Dr. William Whitridge Williams, secretary, Colorado State Board of Medical Examiners, reports 3 physicians licensed by endorsement, April 4, 1933. The following colleges were represented:

| College | LICENSED BY ENDORSEMENT | Year of Grad. | Endorsement |
|---|-------------------------|---------------|-------------|
| College of Medical Evangelists | | (1921) | California |
| College of Iowa College of Medicine | | (1931) | Iowa |
| State University of Iowa College of Medicine and College of Physicians and Surgeons | | (1931) | Maryland |

Illinois April Examination

Mr. Paul B. Johnson, superintendent of registration, Department of Registration and Education, reports the oral, written and practical examination held in Chicago, April 11-13, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Forty-one candidates were examined, 36 of whom passed, and 5 failed. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|--------|------------|---|
| Chicago Medical School | | (1932) | 83, 85, 82 |
| Loyola University School of Medicine | | (1931) | 80, 82, 84 |
| Northwestern University School of Medicine | | (1932) | 79, 80, 80, 82, 83, 84 |
| Rush Medical College | | (1932) | 84, 86 |
| School of Medicine of the Division of the Biological Sciences, University of Chicago | | (1931) | 80, 85, (1933) 76, 80, 80, 81, 81, 82, 82, 83 |
| University of Illinois College of Medicine | | (1926) | 80, 85, (1933) 76, 80, 80, 81, 81, 82, 82, 83 |
| University of Minnesota Medical School | | (1933) | 80, 85, (1932) 77, 83, 85, (1933) 76 |
| University of Minnesota Medical School | | (1929) | (1931) 85, (1932) 77, 83, 85, (1933) 76 |
| Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Hungary | | (1923) | 85, 86 |
| University of Glasgow Medical Faculty | | (1925) | many, 1 |
| College | FAILED | Year Grad. | Number Failed |
| Howard University College of Medicine | | (1930) | 1 |
| Chicago Medical School | | (1931) | 2 |
| University of Illinois College of Medicine | | (1932) | 1 |
| University of Naples. Facoltà di Medicina e Chirurgia | | (1930) | 1 |

Rhode Island April Examination

Dr. Lester A. Round, director, Rhode Island Public Health Commission, reports the written and practical examination held in Providence, April 6-7, 1933. Eleven candidates were examined, 10 of whom passed and one failed. Two physicians were licensed by endorsement. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|--------|------------|----------|
| Georgetown University School of Medicine | | (1931) | 82.1 |
| Boston University School of Medicine | | (1932) | 86.5 |
| Boston University Medical School | | (1932) | 88.3 |
| Harvard University Medical School | | (1932) | 87.5 |
| Tufts College Medical School | | (1929) | 90.2 |

subsidized, a soothing ointment such as ointment of zinc oxide, or equal parts of Lassar's paste and petrolatum, or 10 per cent naftalan with 2 per cent sulphonated bitumen in Lassar's paste can be used. The patient, of course, should avoid all contact with roto-gravure ink. These cases are not common nowadays, because most of the newspaper publishers have discontinued the strong powder containing paranitro-aniline, which was used in the manufacture of these inks.

TOXICITY OF TETRA-ETHYL LEAD

To the Editor:—Recently an automobile accident occurred close to town. One child was burned to death and two women were brought into the hospital. One woman died in twenty-four hours and the other in forty-eight hours. These deaths were apparently not toxic, because the burns were only of the first degree and one especially was not very extensive. The only thing that I could figure out was that it could have been from the fumes of ethyl gasoline. I checked the automobile but there was no gasoline left anywhere in it. I would appreciate any information on this subject.

ANSWER.—It is improbable that the lead in the gasoline was a factor in these deaths. At least the report gives no details that would so indicate. Although tetra-ethyl lead in concentrated form is extremely poisonous, up to the present time no fatalities have been proved to have resulted from the use of ethyl gasoline.

VESTIBULAR AND CALORIC TESTS IN DIAGNOSIS

To the Editor:—Kindly advise whether the Bárány test is of value in making diagnoses in disease of the semicircular canal, and also if useful in differential diagnosis between intracranial lesions and labyrinthine disease.

N. H. COLTON, M.D., Norristown, Pa.

ANSWER.—Bárány's name is often used to include all the vestibular tests, such as the turning, caloric and galvanic. At other times his name is associated merely with the caloric reaction. These tests are of great value in the study of pathologic changes involving the vestibular apparatus, especially the semicircular canals. They are also of great aid in making the differential diagnosis between labyrinthine and intracranial lesions.

PROPHYLAXIS FOR RENAL CALCULI

To the Editor:—I have a patient who has had two operations for renal calculi that consisted of calcium magnesium phosphate. What prophylactic measures would you suggest to try to prevent any recurrence? Please omit name.

M.D., Philadelphia.

ANSWER.—1. Any disturbance of the normal drainage from the renal pelvis should be corrected.
2. The renal pelvis should be lavaged with 1 per cent solution of phosphoric acid.
3. The patient's intake of fluid should be kept quite high.
4. The reaction of the urine should be determined from time to time and, if alkaline, should be changed by the administration of sodium benzoate or acid sodium phosphate.
5. All possible foci of infection should be studied (teeth, throat, sinuses) and if found infected they should be cleaned up.

HARDNESS OF WATER AND ETIOLOGY OF PYURIA

To the Editor:—Since moving to this city to practice medicine in July, 1932, I have noticed that a high percentage of my patients show a persistent pyuria, at least 75 per cent of all cases showing infection of the urinary tract. Inquiry from other physicians reveals that they too are seeing too many cases of pyuria. Several hundred men have moved here while doing road construction work, and their history almost invariably is that they were in perfect health until they began drinking the water, a chemical analysis of which shows: depth of wells, 164 feet; total solids, 1,380; hardness, 565; sodium chloride, 594; calcium bicarbonate, 205; calcium sulphate, 218; sodium sulphate, 194; magnesium sulphate, 120; magnesium chloride, a trace; iron and aluminum, traces (International Filter Company, Analyst, 1926). From the data available is it probable that this water has any effect on the incidence of urinary infections in this city? M. E. BARRETT, M.D., Fort Stockton, Texas.

ANSWER.—The hardness of the water has no connection with the incidence of urinary infections. Pyuria can occur in many conditions other than infections of the bladder, ureters and kidneys. Admixture of pus from the foreskin can give a marked pyuria. In gonorrhea, and from below the foreskin can give a marked pyuria. In marked dehydration in infants a sterile pyuria may occur, but, with this exception, pus coming from the bladder and upper urinary passages is always due to an infecting organism.

If it is true that at least 75 per cent of all cases show infection of the urinary tract, it certainly would be worth while taking cultures to determine what the infecting organism is. The water is extremely hard but there is no evidence at hand that hard water predisposes to infection.

| | | |
|--|---------------------|-------------|
| University of Rochester School of Medicine..... | (1929) | 81.2 |
| University of Oregon Medical School..... | (1913) | 82.9 |
| University of Vermont College of Medicine..... | (1930) | 86.2 |
| McGill University Faculty of Medicine..... | (1917) | 84.1 |
| Regia Università di Napoli. Facoltà di Medicina e Chirurgia | (1930) | 82.1 |
| FAILED | | |
| College | Year | Per |
| University of Montreal Faculty of Medicine..... | Grad. (1932) | Cent 76.8 |
| LICENSED BY ENDORSEMENT | | |
| College | Year | Endorsement |
| Johns Hopkins University School of Medicine..... | (1931) N. B. M. Ex. | Grad. of |
| Harvard University Medical School..... | (1931) N. B. M. Ex. | Grad. of |

* License withheld pending completion of internship.

Wisconsin Reciprocity Report

Dr. Robert E. Flynn, secretary, Wisconsin State Board of Medical Examiners, reports 11 physicians licensed by reciprocity with other states, April 11, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year | Reciprocity |
|--|-------------------------|-------|-------------|
| Northwestern University Medical School..... | (1924), (1931, 2) | Grad. | with |
| State University of Iowa College of Medicine..... | (1928), (1930) | Grad. | Illinois |
| Johns Hopkins University School of Medicine..... | (1926) | Grad. | Iowa |
| Univ. of Michigan Dept. of Med. and Surgery..... | (1885) | Grad. | Maryland |
| University of Michigan Medical School..... | (1917) | Grad. | Nevada |
| University of Minnesota Medical School..... | (1932) | Grad. | Michigan |
| University of Nebraska College of Medicine..... | (1931) | Grad. | Minnesota |
| Western Reserve University School of Medicine..... | (1928) | Grad. | Nebraska |
| | | | Ohio |

Book Notices

Practical Hematological Diagnosis. By O. H. Perry Pepper, M.D., Professor of Clinical Medicine, University of Pennsylvania, and David L. Farley, M.D., Physician to the Pennsylvania Hospital, Philadelphia. Cloth. Price, \$6. Pp. 562, with illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

The authors present the practical aspects of hematology in concise and simple terms. They point out that much of the information in clinical hematology is not readily available to the practitioner of medicine because of a confusion of terms and methods.

The book is divided into three parts. The first part deals with components of the blood that are of hematologic interest. Each discussion on the cellular elements of the blood is well balanced and includes the most recent information. The first chapter, on the origin and development of the formed elements of the blood, is concise but comprehensive. It contains only such information as is necessary for a practical consideration of the facts that are developed later. Chapters on the erythrocyte, hemoglobin, white blood cells and blood platelets are practical and instructive. The material is selected with discrimination and presented in a well organized manner. The authors' selection of the methods for platelet counting are, with the exception of Fonio's methods, those recently described in current literature. It is questionable whether the technic cited has any special advantage over the ones commonly given in standard books on laboratory methods. The statement that the bleeding time is in direct proportion to the number of platelets is also open to question. The disparity between the two observations is well known and is one of the reasons why the absolute relationship of platelet reduction and purpura has been recently questioned.

The chapter on blood coagulation is well presented. The theoretical aspect is concisely reviewed and several methods are given for the practical determination of the clotting time. Blood grouping and the hematologic aspects of blood transfusion is a well written chapter. The large amount of material on this subject is well summarized and its practical application has been utilized to the fullest extent. The data in the chapter on blood parasites are well selected and concise. Illustration of the parasites would have aided the descriptive methods of identification, as many physicians do not have the opportunity of seeing many of the forms described.

The second part of the book deals with the diagnosis of disorders of the hematopoietic system and the hematologic observations. This is a particularly well organized section of the book. The hematology of the anemias comprises the most recent studies and data available. The leukemias and leukemoid conditions are discussed with adequate completeness for

a work of this kind. It is difficult, however, to give this subject proper consideration without more detailed information on the pathology of the blood-forming organs. The chapter on purpura and hemorrhagic diseases should have been considered more critically. It is difficult to conceive of a practical classification of purpura on the basis of quantitative platelet counts with our present information. More space could have been profitably devoted to the pathogenesis of the various types of purpura. Under hemophilia the work on the stability of the platelets as demonstrated by Howell and Cedaka and later by Birch is not mentioned.

A chapter is devoted to the hematology of infancy. The authors take issue with the term "von Jaksch anemia" and the newer terms "erythroblastic" anemia and "Cooley's anemia." While their criticisms are valid, their substitute for "hyperplastic anemia" is also open to the same objections. No one who has observed many cases of so-called von Jaksch or erythroblastic anemia could agree to many of the statements in the text. The blood examination in icterus gravis and edema of the new-born, recently described in current literature under "erythroblastosis fetalis," was not covered in this section. It would have made an excellent addition to the point of view expressed by the authors, namely, an unusual blood picture of infantile anemia.

Part II is concluded by an interesting and instructive chapter on effects of irradiation, splenectomy and certain chemicals on the normal and pathologic blood picture.

Part III deals with hematologic conditions of diseases not primarily of the blood. In this section the authors list alphabetically diseases that have an effect on the blood-forming organs and discuss the changes reflected in the blood picture. The colored plates that appear in the text do not bring out sufficient nuclear detail in the younger cells to facilitate recognition.

The book, taken as a whole, is an exceptionally well organized and practical presentation of hematologic diagnosis. The authors have made a sincere attempt to present the data in a simple and rational manner and the book should be well received by practitioners of medicine.

Chemische Grundlagen der Lebensvorgänge: Eine Einführung in biologische Lehrbücher. Von Professor Carl Oppenheimer, Dr. phil. et med., Berlin. Paper. Price, 22.50 marks. Pp. 298, with 1 illustration. Leipzig: Georg Thieme, 1933.

The author presents something different from the ordinary textbook of biologic chemistry. In fact, it is an introduction to such works. The author appreciates the difficulties and modestly asks consideration for any shortcoming in the attainment of his ideals. These ideals are a philosophical unification and simplification of the chemical and physical processes of living matter. He prefers the term "living matter" to the term "cell." In the introduction he discusses protoplasm and closely related matter, building material and "heat material," electrolysis, energy, material of the cell nucleus, and the bioelements. The inorganic elements are classified as the essential and the accidental or relatively nonessential. Under the latter term many metals heretofore considered nonessential are deemed worthy of perhaps more consideration than some writers have accorded to them. Such metals include aluminum, copper, arsenic, lead, bromine, cobalt, manganese, silicon and others. The author gives full references to the original work for his statements, and these references are mainly from recent research. It would seem that the biologic importance of many metals has not been fully appreciated. The second chapter deals with colloids, fats, waxes, lipoids, carbohydrates, respiration and proteins. The interrelationship of these bodies and their relationship to other elements of protoplasm, including vitamins and hormones, is considered. The chapter is impressive because of its comprehensiveness and compactness, yet it puts the reader in contact with the latest and most important literature. The third chapter deals with circulation and the processes of anabolism and catabolism and is distinctly modern. The greater part of the literature citations are from 1925 to 1933. The fourth chapter deals with the chemical mechanism of cell processes, catalysis and ferment action, "desmolyse" (enzymotic processes), assimilation, ion action, oxidation and reduction, cell respiration and surface action. While many of these processes are not well understood, the work given shows that research in the mechanism of cell chemistry during the last

few years has made great strides. The last chapter deals with the energetics of living matter and with living matter as a chemodynamic machine. This is a highly specialized branch of biology in which relatively few are engaged. The pages devoted to it show its importance and are sufficient to give the reader a good general knowledge of the methods used, and an acquaintance with the investigators working in this important and fundamental branch of biochemistry. As the name would indicate and the discussions confirm, this is not a book for the uninitiated. It is the product of a scholarly investigator and is recommended to those with scholarly inclinations who desire information on the chemistry of life.

Clinical Endocrinology of the Female. By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania, and Leopold Goldstein, M.D., Demonstrator of Obstetrics, Jefferson Medical College. Cloth. Price, \$6. Pp. 519, with 137 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

Well nigh a year has passed since the publication of this volume. Its title is in itself an indication of the extremes of specialization that have occurred in medical science; this monograph concerns not endocrinology as such but endocrinology as it affects the female. No doubt, the special point of view is warranted since probably more work has been done in the past few years on the estrus hormones and the relationship of other glands of internal secretion to the gonad than on almost any other subject. Authorities are in general agreed that a derangement of the pituitary anterior lobe affects the body as a whole more seriously than a primary derangement of any other endocrine gland. A few years ago it was conceivable that the pituitary might contain one or two hormones. Today there are authorities who postulate as many as eighteen different substances. Most of the discussion of the pituitary gland in the present book is devoted to the growth promoting principles and the gonad stimulating substance, which are well recognized. Conceivably either of these two major effects may have side effects not specifically pituitary in character. The posterior pituitary has a well recognized antidiuretic effect and an oxytocic action. It is, of course, also associated with the carbohydrate and fat metabolism. The presentation by Mazer and Goldstein is concerned primarily with menstruation and menstrual disorders. They cite numerous cases not only from their own practice but also from medical literature. A chapter is devoted to sterility, and there are also chapters dealing with lactation, tests for pregnancy, and obesity. A well selected bibliography completes the book.

Electricity: What It Is and How It Acts. Volume II. By Andrew W. Kramer. Cloth. Price, \$2. Pp. 290, with 112 illustrations. Chicago: Technical Publishing Company, 1931.

With the minimum amount of simple mathematics, the author has compiled in this small volume a splendid series of articles on the fundamental nature of electricity. A physician having an elementary knowledge of college physics should enjoy reading about some of the recently advanced theories concerning electricity. Electromagnetic radiation, roentgen rays, light, photo-electrical effects and the electron are dealt with in simple, readable language. The scientific aspects of the problems have not been unduly strained for simplicity's sake. A physician specializing in roentgen therapy or ultraviolet radiation therapy will probably find this volume a worth while addition to his library.

Le terrain cancéreux et cancérisable; Physiologie pathologique du cancer. Action biologique des radiations. Par R. Reding, directeur de la Fondation Yvonne Boël. Paper. Price, 50 francs. Pp. 389, with 17 illustrations. Paris: Masson & Cie, 1932.

In this treatise, Reding has accumulated the available evidence in support of the theory that cancer is primarily a constitutional disease. To the evidence gathered in the literature the author has added his own investigations, the results of which support this view. The susceptibility of some animals to tar and the immunity of others are indicated as an example of an underlying constitutional predisposition. Variations in racial susceptibility in animal and man are interpreted in a similar manner, as is also hereditary predisposition and resistance. The author maintains that physicochemical changes in the cancerous organism are found in the precancerous state and persist after surgical extirpation of the lesion. These facts

are interpreted as indicating that these changes are an integral part of the general predisposition. In almost all cancer patients the author discovered a more or less serious disturbance of sugar metabolism. Alkalosis of the plasma, a diminution in the concentration of ionized calcium, and a disturbance in the sugar regulating mechanism are said to be already present in the precancerous state and are therefore not secondary to the appearance of the tumor. X-rays and radium are reported to exercise a profound and lasting effect on the reaction of the blood in cancer patients. A reduction in the degree of alkalosis, an increase in calcium and a reestablishment of the normal sugar regulating mechanism were noted to follow effective irradiation. The author believes that a determination of the pH of the blood constitutes a practical and important diagnostic procedure, especially in the detection of the internal cancers. The prevention of cancer by regulating the alkalosis is suggested. Recurrences developed in patients in whom the pH of the blood was only slightly modified by irradiation. Those in whom the pH of the blood recovered showed a better prognosis. This elaborate treatise is of interest and constitutes a useful though uncritical summary of the evidence dealing with this subject. The array of evidence that the author has succeeded in lining up to support his thesis is truly formidable, but the review is not sufficiently critical and all contradictory evidence is either omitted or minimized. This attitude is obviously a dangerous one in medical research, as it is likely to lead to fallacious conclusions. In spite of their alluring appeal, the facts scarcely justify the conclusions which the author has drawn. The suggestions that diagnosis and treatment of cancer can be based on the evidence presented, though most attractive, cannot be accepted without further study and confirmation of these results. The treatise nevertheless presents a highly interesting point of view, which should be subjected to further study. This research has stimulated considerable interest in this field of investigation, the results of which should help to clarify this highly interesting and controversial problem.

Bibliographical Survey of Vitamins, 1650-1930. Compiled by Ella M. Salmonsens, Medical Reference Librarian, The John Crerar Library, Chicago. With a Section on Patents. By Mark H. Wodlinger. Cloth. Price, \$10. Pp. 334. Chicago: M. H. Wodlinger, 1932.

This is a useful compilation of references on vitamins, listed chronologically from the year 1650 up to and including 1930. After 1916 the references for each year are subdivided by the type of vitamin, and a section is included on general vitamin references. The bibliography is unusually complete, containing approximately 12,000 references. Those available in the John Crerar Library, as well as additional rare material secured from other American and European libraries, are included in the survey. In addition, 240 patents pertaining to vitamins are listed with numbers, names of patentee and title. The book will be welcomed by any one who is interested in vitamin research and related fields. The material is well organized and discriminatingly inclusive.

Annual Report for the Year 1932 of the Egyptian Government, Central Narcotics Intelligence Bureau. Paper. Pp. 170, with illustrations. Cairo: Government Press, 1933.

This report reveals some astounding facts relative to the difficulty of controlling narcotic addiction in Egypt. Apparently that country is now suffering with a flood of hashish introduced from Syria. Great benefit has accrued from the closing of opium factories in Turkey. The Egyptian authorities insist that the European center for the manufacture of heroin destined entirely for illicit trade has shifted from Istanbul to Sofia in Bulgaria. Driven from Turkey, it is now elsewhere, and the director of the intelligence bureau considers that, driven from Sofia, it will turn up in some other city. Mr. Russell says that only complete international understanding and agreement can control the drug traffic. The report is a highly interesting document showing that drugs are shipped in every possible way and that the tricks of the trade are amazingly intricate and devious. The report gives names, dates and places, one statement being to the effect that an attaché of the Peruvian government, traveling with a diplomatic passport, brought a ton and a half of heroin into the United States in six different trips. It shows, furthermore, that the notorious "Legs" Diamond of New York was intimately in contact with the narcotic trade and that several

murders in New York were directly related to the stealing and manipulation of narcotics. For those who wish something in the way of an intimate and exact insight into this deplorable traffic, this official document is a revelation.

The Book of Delight. By Joseph Ben Meir Zabara. Records of Civilization, Sources and Studies. Volume XVI. Translated by Moses Hadas. With an introduction by Merriam Sherwood. Cloth. Price, \$3.25. Pp. 198. New York: Columbia University Press, 1932.

This volume is a document from the eleventh and twelfth centuries which affords an excellent illustration of the wit, science and literary resources of Spanish Jewish society of that period. For the physician it is especially of interest because of certain medical discussions. In chapter 8 there is the usual good advice relative to the avoidance of excesses in eating. Chapter 9 is devoted wholly to a knowledge of medicine of the period. There are thirty-two questions in a medical catechism showing how simple was the actual knowledge of the period. For instance, the questioner asks "How many are the canals of the bowels?" The answer is "Three; one lengthwise to receive the food, and one diagonal to retain it until it be digested, and the third crosswise to force the food on and expel it when it hath been digested." On the other hand there is much of wisdom in the following question: "Wherefore doth a little lad eat more than a grown man?" To which the answer is given "Because the lad requireth his food for two purposes, to carry on life and for growth, whereas the man requireth his food only to carry on life."

Die Erkrankungen der Harnorgane im Röntgenbild. Von Dr. Hans Boemlinghaus, a. o. Professor für Chirurgie an der Universität Marburg, und Dr. Ludwig Zeiss, Facharzt für Urologie, Chefarzt des Sanatoriums Helenenquelle Bad Wildungen. Cloth. Price, 45 marks. Pp. 232, with 379 illustrations. Leipzig: Johann Ambrosius Barth, 1933.

This atlas is an important addition to the literature of roentgenology. The illustrations are excellent and the subject matter is presented in a clear and concise manner. The detail in the urographic pictures is brought out distinctly, since extraneous matter, such as gas, has been removed. The arrangement is good and includes many of the important urologic subjects. After a short historical review of the development of the x-rays, instruments and urography, the methods and preparation are considered. This is followed by a condensed account of instrumental pyelography, excretion urography and the urologic roentgen examination of children. Then in succession are presented abridged descriptions and urograms of malformations and anomalies, urinary lithiasis, inflammations, tuberculosis, tumors, injuries, fistulas and disturbances of function. Pyeloscopy is given but little space and importance. Pneumoradiography is cautiously described, with proper warnings. This volume is an excellent work and should be of value to both the urologist and the roentgenologist.

Text-Book of Massage and Remedial Gymnastics. By L. L. Despard. With two chapters contributed by Hester S. Angover, Sister-in-Charge of the Massage Department, Guy's Hospital, London. Third edition. Cloth. Price, \$6. Pp. 474, with 222 illustrations. New York: Oxford University Press, 1932.

The first part is devoted to the principles of elementary anatomy and physiology necessary to students of the technic of physical therapy. The theory and practice of massage are thoroughly considered in the second part. Swedish remedial gymnastics, the reeducation of muscles and other exercises are given in detail. The book is well illustrated throughout. It is an excellent textbook for physical therapy technicians.

The Professions. By A. M. Carr-Saunders and P. A. Wilson. Cloth. Price, \$6.75. Pp. 536. New York & London: Oxford University Press, 1933.

This volume is a study of the organization of the professions in Great Britain. The sections of special interest to the physician concern doctors, dentists, nurses, midwives, pharmacists, opticians and masseurs. The second part of the book covers the evolution of the professions following the industrial revolution, state interference in practice, economic problems and relationships of the profession to the public and the relationships of the professions to the future. Two of the six appendixes deal with professional codes and the conditions of service of doctors under the national health insurance scheme.

Most American physicians know that the British medical profession is organized and licensed on a different basis from

our own. The nature of organization and licensure in Great Britain is fully explained. In Great Britain there are 55,000 names on the medical register, and the membership of the British Medical Association amounts to about 35,000. There is also a medical practitioners' union with approximately 3,000 members. The success of the British Medical Association is credited by the writers to the fact that it has had persistently skilful leadership over a long period through a long succession of unusually able permanent officials and of medical men willing to sacrifice time to the affairs of the association. The British Medical Association is organized on a democratic basis similar to the organization of the American Medical Association. High praise for the constitution of the British Medical Association is offered by the authors; indeed, they credit the British Medical Association with an important effort in the passing of the national health insurance bill providing for free choice of doctor by patients and for representation of physicians on all committees controlling the workings of the act. There is now general agreement that the British Medical Association was right in 1911 in insisting on the conditions under which insurance should be introduced. In the opinion of the authors, however, the British Medical Association went beyond what it hoped to do at that time and was used "as a stick with which to beat the government of the day." The method employed during the insurance bill fight was collective bargaining, a method that is still used by the British Medical Association in dealing with the government. The British Medical Association spent more than £30,000 in the controversy on the national health insurance bill in addition to money raised by special funds. It is pointed out that, through refusal to publish in its journal advertisements of positions which do not come up to the requirements of the association, the association exerts a powerful influence.

Chapters on dentists, midwives, veterinary surgeons, opticians, pharmacists and masseurs consider in detail the history of these professions in Great Britain, their organization and their relationship to other professions and to the public. It is pointed out that a medical education in Great Britain costs approximately £1,500. The book contains a vast amount of useful information for those who are participating in current widespread discussions of the future of American medical practitioners.

Lehrbuch der klinischen Untersuchungsmethoden für Studierende und praktische Ärzte. Band II, Hälfte 1. Von Prof. Dr. H. Sahli. Seventh edition. Paper. Price, 22 marks. Pp. 368, with 92 illustrations. Leipzig: Franz Deuticke, 1930.

The first section of volume II is completely revised. The author has not only brought the various laboratory methods down to date but he has reevaluated their significance in clinical medicine. The first half of volume II deals, for the most part, with urine analysis and its clinical significance. Every phase of the subject has been completely revised. Long and tedious methods have been replaced by procedures that are easier to carry out without sacrifice of accuracy. The author has added a comprehensive discussion on urinary pigments and carefully revised the quantitative analytic methods. The microscopic examination of urinary sediment is unusually complete. Kidney and liver function tests and gallbladder visualization are discussed with reference to technic and clinical significance. The chapter on examination of sputum is concise but comprehensive. Special attention has been given to the bacteriologic examination of sputum; the detection and study of the tubercle bacillus is stressed particularly. The remaining part of this section of volume II is devoted to physicochemical methods of blood examination that are of clinical interest. The author has enlarged considerably the section on examinations of blood in hemorrhagic diathesis. The latest methods of evaluating the clotting mechanism of the blood are discussed and the changes in various diseases are emphasized. The methods of corpuscular volume determinations are critically discussed and the sources of error are noted. Sahli suggests a new method of his own to meet the errors inherent in the ones in use previously. Those who are familiar with the wealth of data and charming manner of presentation of the previous editions of Sahli's book will welcome the seventh edition. It has been thoroughly revised not only from the point of view of laboratory methods but also from their clinical

indications. The author makes a plea to the clinician to use laboratory work only to develop more completely his clinical observation. He criticizes routine laboratory work, particularly as carried on in some American hospitals, in that so much time is taken up in routine collection of data that not enough time is left for careful study of the patient and the work that is specifically indicated. This book will be enthusiastically received by clinicians who have a scholarly interest in disease and are critical in their clinical investigation.

Exploration fonctionnelle des voies biliaires et chirurgie. Par L. Bérard, professeur de clinique chirurgicale à la Faculté de médecine de Lyon, et P. Mallet-Guy, chef de clinique chirurgicale à l'Hôtel-Dieu. Paper. Price, 68 francs. Pp. 362, with 86 illustrations. Paris: Masson & Cie, 1932.

This is a new monograph by two prominent French surgeons, who for the past six years have made a clinical study of Meltzer-Lyon duodenal drainage and cholecystography in an effort to determine their clinical applicability in surgery of bile tract disease. Both of these methods give information regarding the physiology of the bile tract. Every surgeon of experience is familiar with that group of cases in which disease of the bile tract unquestionably exists but in which at operation the gallbladder shows no gross pathologic anatomic change. The authors believe that the surgery of the bile tract should be developed not only to correct any pathologic anatomy but, what is more fundamental, to remedy any pathologic physiology that exists. The aim of this volume is to show the clinical value of these functional tests as guides in the treatment of surgery of the bile tract. The authors have carefully studied 135 cases of bile tract disease, using these two methods of testing the function before operation, immediately after operation, and a long time after operation. Their experience forces them to agree with Mathieu, with Santy and with Cotte in avoiding cholecystectomy as a routine operation in gallbladder disease. They have found duodenal drainage of value in improving the condition, without risk, in those patients in whom cholecystectomy has been followed by failure. They admit that treatment of biliary tract disease by duodenal drainage alone is not permanent and that its therapeutic efficacy does not compare with cholecystectomy. But they do feel that its use as a preoperative test yields valuable information in guidance as to what operative intervention is indicated. A large amount of space is devoted to studies by these methods postoperatively: the physiologic observations after cholecystectomy, after cholecystogastrotomy, and still more after cholecystostomy. The authors believe that cholecystostomy offers incomparable possibilities for the study of the normal and pathologic physiology of the bile tract in man. This chapter is perhaps the most original in the entire volume. They have recorded the variations in the types of bile excreted and have studied the passage of bile following the injection of lipiodine. The volume will be of interest to both surgeons and internists.

William Shakespeare, M.D. By Harry B. Epstein, M.D. Boards. Price, \$1. Pp. 24. Newark: Lasky Company, Inc., 1932.

This is a brief essay on the medical aspects of some of Shakespeare's writings. The universality of interest in Shakespeare needs no comment. This well arranged and studious essay is a welcome contribution.

Manuel d'urétroscopie postérieure. Par Gaston Busson et Robert Henry. Préface du Dr. Marion. Paper. Price, 55 francs. Pp. 80, with 50 illustrations. Paris: Masson & Cie, 1931.

This manual of posterior urethroscopy is like several others on the same subject, especially those emanating from France, being rather an atlas in which the more common pathologic processes are well illustrated. The subject of posterior endoscopy has been stimulated recently in the United States by the various endo-urethral methods of prostatic resection, and there is no doubt that an increased familiarity with the anatomy and pathology of the posterior urethra as observed through the endoscope would have a salutary influence on American urology. The present volume is satisfactory as far as the text is concerned, but the color values in some of the plates are markedly exaggerated. The book can be heartily recommended, and the information that it contains should be a part of the knowledge of every surgeon treating genito-urinary diseases.

Medicolegal

Medical Practice Acts: Drugless Healers May Not Practice Surgery; Mechanotherapy Does Not Include Surgery.—Lydon, a sanipractor, was licensed to practice drugless healing in the state of Washington. A patient suffering from an advanced cancer of the breast consulted him, Aug. 12, 1930. He told her that he could effect a cure in three months, and she thereupon placed herself under his care. Lydon's treatment consisted principally in keeping his patient on a liquid diet, with frequent hot baths. According to his theory, the general condition of the patient was to be improved by aiding the eliminative processes, and the cancer would be brought to a head. Then it could be treated by lancing, as boils are commonly treated. On December 1, with his patient in a desperate condition, Lydon made an incision into her breast, from which blood and pus exuded. Later, on the same day, the patient was taken to a hospital. Lydon examined her there the next morning, but because of his limited license and sectarian practice he was not allowed to treat her. She died, Jan. 12, 1931. Lydon was convicted of practicing medicine and surgery without a license. He appealed to the Supreme Court of Washington.

The legislature of the state of Washington, the Supreme Court pointed out, in 1919, enacted a law to regulate the practice of osteopathy and of osteopathy and surgery; a law to regulate the practice of chiropractic; a law to regulate the practice of drugless healing, which includes sanipractic, although it is not specifically named; and a law to regulate the practice of medicine and surgery in all branches. A study of these laws, said the court, leads to the inevitable conclusion that the legislature intended to provide and did provide that licentiates authorized to practice medicine and surgery may use drugs or medicinal preparations, practice surgery, and employ any and all other methods in the treatment of human ailments, but that licentiates of other classes should restrict themselves each to the particular method of healing professed by him and designated in his license. The law regulating the practice of drugless healing makes no provision for an examination in surgery or for the issue of certificates authorizing practitioners of drugless healing to practice surgery.

In *Wilcox v. Carroll*, 127 Wash. 1, 219 P. 34, the Supreme Court of Washington said:

Appellant is what is called a sanipractor physician, not licensed as a full sanipractor, but licensed to use the methods of treating disease known as hydrotherapy, dietetics, electrotherapy, and psychotherapy. Such practitioners are not permitted to use drugs such as physicians of the regular schools use, nor to perform operations.

In *State ex rel. Walker v. Dean*, 155 Wash. 383, 284 P. 756, the court said:

It was the manifest intention of the Legislature to prohibit the holders of restricted licenses from practicing branches of the art of healing not embraced within the subjects upon which the licensee had been examined, and which by his certificate he was authorized to practice.

In harmony with these decisions and others cited, the Supreme Court concluded that drugless healers, including sanipractors, may not practice surgery unless specifically authorized by proper certificates.

The defendant-sanipractor contended that because the examination which drugless healers are required to take includes an examination in obstetrics, and because obstetrics may involve a form of surgery, he was entitled to use surgery to the extent to which he used it in the present case. Whether the defendant is limited in an obstetric case to the severing of the umbilical cord or to the removal of the after-birth or may go to the full length of performing a cesarean operation, said the Supreme Court, it is not necessary here to determine; the present case is not an obstetric case, but one involving an operation on a cancer. The defendant-sanipractor further undertook to justify the treatment of his patient by contending that the statute does not condemn individual and sporadic acts but condemns only the general holding out of oneself as being regularly engaged in the practice of surgery. His act in the present case, he claimed, was merely incidental, casual, an emergency act of a "Good Samaritan," under the stress of immediate circumstances. With these contentions the Supreme Court did not agree. The law censures and forbids not only the holding out of oneself as being engaged in the practice of surgery generally, but also the practice

or attempted practice of surgery specifically. The act of the defendant was not an incidental, causal or emergency act, said the court, but was deliberate, designed and prearranged. The defendant claimed finally the right to practice surgery by virtue of his right to practice mechanotherapy and mechanical manipulation. The terms mechanotherapy and mechanical manipulation, said the court, imply simply a remedial treatment consisting of the manipulation of a part or of the whole of the body, with the hand or by mechanical means. In plain English, they mean massage manually or mechanically performed. They certainly do not include the practice of surgery in any form.

The conviction of the defendant was affirmed.—*State v. Lydon (Wash.)*, 16 P. (2d) 848.

Hernia and Lymphatic Leukemia Attributed to Trauma.—Jan. 12, 1931, a wagon driven by Stanley Witkowski was struck by an automobile operated by the defendant. Witkowski received lacerations about the head, face, mouth, lower lip and tongue and was severely injured over a large area of the abdomen and right thigh. He remained in bed from the date of the accident until Feb. 1, 1931. No physician saw him during that period, except a physician sent by the defendant to examine him, who, according to the record, seems to have found merely that the patient's lip was infected. February 1, a physician found the patient acutely ill, with considerable swelling and infection of his mouth and tongue, very extensive contusions of the abdominal wall, marked ecchymosis on the right side, and a hernia in the right inguinal region. Witkowski was taken to a hospital, February 2. February 9, an operation for hernia was performed, and on that day symptoms of anemia appeared. June 20, he was readmitted to the hospital, his physician having determined that he was suffering from lymphatic leukemia. He died, Jan. 6, 1932, his death being attributed to that disease. Witkowski's executrix prosecuted the suit he had begun, and the jury gave a verdict in her favor. The defendant appealed to the Supreme Court of Errors of Connecticut.

The defendant claimed that the evidence did not show that the hernia was caused by the accident. In addition to the testimony as to the decedent's good health before the accident and his physical condition and pain in the region of the lower abdomen immediately after it and up to the time of the operation, said the Supreme Court of Errors, the physician who operated expressed the opinion that the hernia was caused by the accident. The lymphatic leukemia from which Witkowski died was attributed by the witnesses for the defendant to causes other than the accident, but physicians for the plaintiff were of the opinion that the accident caused it, through the resultant infection of the wounds of the lips and mouth. They testified not that the disease might have resulted or was likely to have resulted from the injury but in substance that in their opinions, taking into consideration all the facts presented and considering every other hypothesis suggested, it was reasonably probable that the disease did result from it and that the injury was its direct cause. Such testimony is sufficient, said the court, to remove the case from the realm of speculation and to present a question of fact to be determined by the jury, and the trial court did not err in refusing to set aside the verdict.—*Witkowski v. Goldberg (Conn.)*, 163 A. 413.

Sheriff's Liability for Hospital Services for Prisoners.—McNabb and Peterson, while committing a crime in Hamlin county, were seriously injured in an automobile accident. Bystanders took them to the plaintiff's hospital in an adjoining county. The sheriff of Hamlin county apprehended the injured men at the hospital and placed guards in the hospital and kept them there until his prisoners could be removed. The hospital sued the sheriff and Hamlin county for services rendered, including the cost of housing and feeding the guards. The trial court gave judgment in favor of both the sheriff and the county, and the plaintiff hospital appealed to the Supreme Court of South Dakota. Under the statutes of South Dakota, said the Supreme Court, it is the duty of the sheriff to confine prisoners in the county jail and to provide for their necessities, including medical attention and nursing. If he cannot furnish adequate attention in the county jail, he may place his prisoners under proper safeguards where they can have that attention. Regardless of how the prisoners in the present case came into the hos-

pital, from the time that the sheriff apprehended them their continuance there was the act of the sheriff. When he permitted his prisoners to remain in the hospital he announced by his conduct that he was adopting that method of furnishing the care that it was his statutory duty to provide. He was therefore held to be liable for the expenses thus incurred. The county, the court thought, may be liable to the sheriff for any money he reasonably expended in caring for his prisoners, but the hospital had no direct claim against the county. The judgment of the trial court in favor of the county was therefore affirmed, but the judgment in favor of the sheriff was reversed.—*Bartron Clinic v. Kallemeyn, Sheriff (S. D.)*, 245 N. W. 393.

Society Proceedings

COMING MEETINGS

- American Academy of Ophthalmology and Otolaryngology, Boston, September 18-22. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Executive Secretary.
- American Association of Physicians, Gynecologists and Abdominal Surgeons, Philadelphia, September 11-14. Dr. Magnus A. Tate, 1 W. 4th St., Cincinnati, Secretary.
- American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
- American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.
- American Roentgen Ray Society, Chicago, September 25-30. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.
- Association of Military Surgeons of the United States, Chicago, September 25-27. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.
- Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.
- Idaho State Medical Association, Twin Falls, September 18-19. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
- Indiana State Medical Association, French Lick, September 25-27. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.
- Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
- Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
- Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
- Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.
- Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
- Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

SOCIETY FOR THE PREVENTION OF ASPHYXIAL DEATH

New York State Conference on Problems Relating to Death from Asphyxiation, held in New York, May 24, 1933

(Concluded from page 314)

The Practical Application of Laryngoscopy and Gas Therapy in the Treatment of the Asphyxiated

DR. EDMUND B. PIPER, Philadelphia: The subject of asphyxia is one of the gravest importance. We of the medical profession are naturally more liable to concentrate our studies on asphyxia neonatorum; but as we must deal with asphyxia resulting from anesthesia in the surgery of women, we must necessarily have some knowledge of the treatment of adults. Unfortunately, the teaching of some subjects in medicine has come down to us as a sort of bankrupt inheritance. Some of these teachings have been utterly fallacious and modern thought should have supplanted them many years ago. There is no place in medicine where this is more true than in certain recognized, accepted methods of resuscitating the new-born.

Let us consider some methods taught me as a student and which I taught some years ago myself. The most annoying is the method of spanking the baby. I can conceive that no harm can come from spanking a child where it should be spanked, but this method has grown to the extent of spanking the baby in the back, which occasionally may be over the kidney region or in the lumbar region, instead of possibly in the back over the lung. I doubt whether any spanking is of particular benefit. However, I make it a rule to spank my grandchildren when they arrive in the world, but it is always

in that locality in which the Almighty intended it should be done. Recalling the inexcusable methods of resuscitation, there comes to mind the method of having in the delivery room a tub of hot water and a tub of cold water. When the infant failed to breathe it was often placed into the hot and then immersed in the cold tub; then back into the hot tub, and so on. The cold tub has been eliminated from the delivery rooms of hospitals with which I am connected.

Possibly the application of electricity in the form of the faradic current may be of some benefit, but I question it. The various types of artificial respiration used in adults are also of questionable efficiency in the new-born. Mouth to mouth insufflation may, in some instances, aid in the resuscitation, but I believe we sometimes blow up the stomach instead of the lungs. Schultze's method of waving the baby around in the air which, incidentally, used to be one of my favorite methods, is, in my opinion, of very doubtful value. Of those aids in resuscitation which have been instituted in the last twenty years, probably the oldest and at one time considered the best was the infant lung motor. I have seen this work with a considerable degree of success, but it is not comparable to some methods brought out in the last four or five years.

What may be considered the actual causes of asphyxia neonatorum? The causes may be divided into three groups:

1. Asphyxia proper, occurring during delivery from such complications as prolapse and compression of the cord, abruptio placentae, or any condition cutting off the blood supply through the cord. A plug of mucus or other obstruction in the air passages, making it impossible for the baby to breathe following birth would, of course, give the same picture. This type of asphyxia is perhaps least often encountered in my services. Our breech presentations, when section is not considered, are extracted almost as a routine as soon as the cervix is fully dilated and effaced. In this manner one is more likely to obviate prolapse of the cord.

2. Injury and shock, particularly intracranial injury from prolonged pressure and trauma in protracted labors. I am convinced that in cases of intracranial injury following forceps delivery the injury may have occurred from protracted labor before the forceps were even sterilized. Unfortunately, for statistical reasons, delivery by forceps is almost invariably charged with the incidence of intracranial hemorrhage. In this type of asphyxia, one is dealing with an injured central respiratory control apparatus, and the prompt application of the general principles underlying the resuscitation of asphyxiated babies is of great importance.

3. Narcosis, or the effect of drugs given the mother before delivery which may have a narcotic action on the infant. In this group must be considered the babies narcotized or anesthetized by the anesthetic given the mother before operative delivery is attempted. One is bound to deliver a baby which is slow to cry when a deep ether anesthesia follows too closely on morphine used in any analgesic combination. This is the type of asphyxia seen most frequently when the operative incidence is great.

This is a matter which should be investigated. We clinicians have observed that almost invariably, following the use of morphine in women in labor, the offspring tends to be difficult to revive should a woman deliver under three hours after the morphine has been given, particularly if she receives any method of inhalation anesthesia during the actual delivery. On the other hand, those women delivered under spinal anesthesia or by cesarean section under local anesthesia apparently may receive morphine hypodermically within fifteen or thirty minutes of the time of delivery.

I agree with De Lee that the "three grand principles underlying the treatment of asphyxia neonatorum" are to (1) clear the air passages, (2) maintain body heat and (3) supply oxygen to the blood.

A few years ago an infant-sized model of the Drinker apparatus was devised by Dr. Douglas Murphy in conjunction with Dr. Drinker. This apparatus has been of great value but after some years of observation I have come to the conclusion that this method of resuscitation, based on the principle of a vacuum, can be of no value in cases in which there is blocking by a mucus plug or in which there is a definite condition of atelectasis. On the other hand, I am convinced that

the Drinker apparatus for infants is of great value for the reviving of the new-born infant which has once had normal respiratory action.

I know of no resuscitation methods or equipment which are so nearly ideal as that designed by Dr. Flagg. One is enabled, under sight, to clear thoroughly the air passages of mucus without danger of injury to the delicate infantile vocal apparatus. Next, one is able to supply the sensitizer and respiratory hormone, namely, oxygen and carbon dioxide, directly into the trachea under absolute pressure control. Almost immediately the faltering heart picks up, the color improves and precious seconds are saved. And seconds literally may decide the fate of the infant, because irreparable harm to the nervous system occurs very quickly in extremes of asphyxia. The Flagg apparatus stands in my delivery rooms ready for instant use, and each of my residents is trained in its use.

Within the past week I have had a remarkable illustration of the value of the Flagg apparatus in the adult. The patient, with a large fibroid tumor, was brought into the operating room under ether inhalation anesthesia. Just as the abdomen was opened she stopped breathing. Artificial respiration was instituted, with the result that after two minutes the patient commenced to breathe again. The hysterectomy was started, and again within two minutes the patient stopped breathing and, although her pulse remained fair, she made no respiratory effort. I finished the hysterectomy and closed the abdomen under artificial respiration, my two assistants taking turns working through sterile covers while I finished. As I was about to close the skin, one of the staff suggested that we try the Flagg apparatus with the adult laryngoscope. We had never before tried the apparatus on the adult. Within thirty seconds after the laryngoscope was placed and the apparatus began to function, the patient started to breathe and soon afterward was returned to the ward and has made an uneventful recovery to date. As to the cause of this asphyxia, I am not prepared to say. All that I know is that the combination of carbon dioxide and oxygen started her breathing normally, after fifteen or twenty minutes of definite artificial respiration.

I feel justified in drawing the following conclusions on which the work of resuscitation in my services is carried out:

1. Most of the old methods of reviving the new-born infant suffering from definite asphyxia neonatorum may and should be abandoned.

2. For asphyxia occurring in the infant in the first few days of its life, granting that it has breathed for some time normally, it would seem that the Drinker apparatus is of very considerable value.

3. For the resuscitation of new-born infants who do not breathe, the Flagg apparatus in the hands of properly trained house surgeons is now the best method of treatment of asphyxia neonatorum.

DISCUSSION

DR. H. J. STANDER, New York: In approximately 2,000 deliveries in eight months the Flagg apparatus has been used, and insufflation in fifty-one cases in which it was quite essential that some such method should be employed. I had a patient whose father-in-law was anxious that I deliver the baby at home. He said he would get all the nurses and facilities I needed. He came in later and said they had discussed the matter and decided to have me do it at the hospital. The father-in-law laid down the law. He told me it was his belief that a great number of babies are lost in hospital obstetrics, and certainly this baby was not going to be lost. The baby came in a posterior position. The head would not rotate. After three hours of second stage labor the heart started to go bad. Ultimately I decided to do the Scanzoni method of rotation, which was successful. The forceps application was simple. The baby lay and would not breathe. Fortunately, Dr. Flagg had been in the clinic two or three months previously and he had instructed the resident and the nursing staff in the use of the apparatus. The baby lay there for about five or ten minutes. I had a vision of this gentleman coming back into my office. The anesthetist got the apparatus, removed a plug of mucus from the throat of the baby and the respiration was begun. There is one further point I should like to mention. In the last month two deaths have occurred from aspiration pneumonia. I lay this before this society as one of the problems in obstetrics.

Principles and Applications of Differential Pressures

DR. POL N. CORYLLOS, New York: The following conclusions can be drawn: First, when the intrapleural pressure becomes equal to atmospheric, the lung remains collapsed, and, second, the intrapleural pressure varies with the variations of the ability of the lung to expand and to retract. Thus, when the lung cannot expand, as in atelectasis or fibrosis, the intrapleural pressure will become more negative; on the contrary, when the lung cannot retract, as in emphysema, the intrapleural pressure will become less negative. Weber, Straub and lately Birnbaum and I have proved that collapse of the lung, whatever may be its cause and origin, is always accompanied by a marked decrease in the circulating blood in the affected lung. This point is of paramount importance in the explanation of dyspnea and cyanosis following pneumothorax. In unilateral pulmonary tuberculosis the oxygen content of the arterial blood increases after the diseased lung is collapsed by means of artificial pneumothorax. It is immaterial whether air has entered the intrapleural space through an opening of the chest wall or through an opening, traumatic or pathologic, of the lung. It is equally without importance whether it is air or fluid that fills the pleural space. The important factors are the volumes and changes produced by them in the intrapleural pressures. With a large opening of the chest wall, air will rush into the pleural cavity; the lung will collapse and ventilation in that lung will cease; a number of phenomena will occur; namely, paradoxical respiration, pendulum air movement and especially mediastinal flutter. On the side of the open chest, air will enter the pleural cavity through the opening. On expiration, both hemithoraces collapse, the diaphragm rises, and the capacity of the chest cavities decreases. Air is expelled through the trachea from the lung of the healthy chest, whereas in the open chest the air filling the pleural cavity rushes out through the opening of the chest wall. This inrush and outrush of air through the chest wound constitutes the so-called traumatopnea. When the opening of the chest wall is small, as compared to the opening of the glottis, the lung will be able partially to expand and collapse during respiration. When a valve mechanism is present in the opening, allowing the air to enter during inspiration but not to be expelled during expiration, the dangerous complication called tension pneumothorax can develop, in which the intrapleural pressure becomes positive.

Changes occur in the mediastinum during unilateral open pneumothorax. During inspiration it is displaced toward the healthy side, since the intrapleural pressure on that side becomes more negative in inspiration; this displacement of the mediastinum encroaches on the size of the healthy chest and thus interferes with the inspiratory inflation of his lung. Conversely, during expiration the mediastinum is displaced toward the pneumothorax side and thus hampers the expiratory deflation of the healthy lung. In that way both inspiratory inflation and expiratory deflation of the good lung and consequently the renewal of air in it becomes deficient, so that oxygenation and elimination of carbon dioxide are impaired. This phenomenon is designated mediastinal flutter. Furthermore, during inspiration the little air contained in the collapsed lung is sucked into the good lung, and during expiration a part of the air expired from the healthy lung passes into the collapsed lung. Thus the collapsed lung expands during expiration and collapses during inspiration, giving rise to the pendulum movement of the air and so-called paradoxical respiration. This is especially marked during the forceful expiratory movements, as in coughing. Last but not least, sudden changes in the size of the collapsed lung produce corresponding sudden changes in the pressures in the large vessels and the heart, especially the right auricle, which may lead to disastrous results.

It is thus obvious that the degree of respiratory disturbances following open pneumothorax depends largely on the mobility of the mediastinum. With a rigid mediastinum, an open unilateral pneumothorax is without any marked ill effect. When the mediastinum is very flexible, the effects on the good lung are almost similar to the ones observed in bilateral pneumothorax. The unfortunate thing is, as Willy Meyer put it, that one cannot always know in advance with the desired degree of certainty which patients possess a rigid mediastinum. Oxygenation of the hemoglobin in open pneumothorax becomes defective

for three reasons: First, the respiratory and circulatory fields have decreased. Second, in the collapsed but not atelectatic lung, circulation is still going on so that blood passing through nonaerated channels arrives at the left heart not oxygenated and thus pollutes the systemic blood. Third, anoxemia acts on the nerve cells of the respiratory center and gradually leads to its fatigue; this is manifested by the lowering of the threshold of its excitability to carbon dioxide, causing rapid shallow breathing, which, in turn, causes excessive elimination of carbon dioxide from the alveolar air and the blood. Thus, acapnia (Henderson and Haggard) is added to anoxemia, further increasing the ill effects of the latter and causing lowering of the blood pressure by peripheral vascular failure (Eppinger) and by inhibition of the venopressor mechanism (Henderson). The amount of venous blood arriving at the right heart is decreased, and, as in excessive hemorrhage, leads to cardiac fatigue, as the heart contracts on an insufficient amount of blood. These phenomena can be greatly or totally relieved when oxygen with carbon dioxide is administered under high partial pressures. In the last analysis, the ill effects of an open pneumothorax depend on and are regulated by the changes of the intrapleural pressure and of the partial pressures of oxygen and carbon dioxide in the alveolar air, the blood and the body tissues.

Prevention and cure of the ill effects that follow open pneumothorax can be obtained in the following ways: 1. By rendering the intrapulmonary pressure higher than atmospheric. This is obtained by placing the head of the patient in a box in which the atmospheric air is maintained at from 10 to 15 mm. of mercury over the outside pressure. This is the positive pressure method. 2. By placing the body of the patient in a chamber in which a pressure of from 10 to 15 mm. below the outside atmospheric pressure is maintained. This is the negative pressure method. It is obvious that both these methods will counteract collapse of the lung although the chest is wide open. 3. By intratracheal insufflation, which is based on the same principles as the positive pressure method. The same result is obtained by applying, in an air-tight manner, an ordinary anesthesia mask on the mouth of the patient and administering air or any mixture of gases under positive pressure. 4. By raising the partial pressure of oxygen; that is, by increasing its percentage in the respired air.

A study of the different devices for differential pressures permits the formulation of a number of conclusions:

1. All elaborate and cumbersome apparatus have become unnecessary and obsolete. The only forms of differential pressure in use today are the mask method, with positive pressure, and endotracheal insufflation.

2. These methods are so closely connected to the administration of anesthesia that they can hardly be separated from it. This is especially true in intrathoracic surgery, in which the success of the operation depends in a great part on the skill and knowledge of the anesthetist.

3. In the group of "differential pressure procedures" belong the methods devised for resuscitation of patients in whom respiration has failed. The life of these patients depends entirely on the skill of the rescuer. As it was shown, it is not a mere question of routine. The accurate diagnosis of the form of asphyxia will dictate the method to be used. The time at one's disposal in these cases is short. It is measured by minutes and often by seconds. Immediate action adequately adapted to the case should be installed without loss of time and skillfully carried on.

4. From the foregoing it becomes obvious that, in the constantly enlarging field of gas therapy, there is need of men with special training, scientific and practical, who will be able to carry on and to develop further this new branch of treatment. These men must have an extensive knowledge of the physiology and the pathologic physiology of respiration and circulation, of the physiologic properties of the gases used and of the technic of their administration.

It seems, therefore, that the men prepared for this work are the anesthetists, provided they complete their general training by the highly specialized physiologic knowledge indicated. The effort that is being made today, and this symposium is a proof of it, shows that the point is near at which the anesthetist of today will develop into the gas therapist of tomorrow and will

assume the leadership in this new branch of therapeutics. I believe that these men will advance and perfect the treatment which is insured today by the emergency squads and the life savers. Whatever may be the team training, the courage and devotion to duty of these men, they are not always sufficient to replace scientific knowledge and scientific training.

DISCUSSION

DR. HORATIO B. WILLIAMS, New York: In thinking of asphyxial death it is a good plan to think of it a little more broadly than as just a matter of the movement of the chest and diaphragm and the passage of air in and out of the lungs, because essentially the circulation and the respiration are one function so far as respiration is concerned. In many cases in which artificial respiration is indicated there is also trouble with the heart, and sometimes this may be the primary thing. If the heart stops for any reason or goes into fibrillation, the respiration will stop presently, because no blood will be transferred to the center. Whether one can resuscitate such a patient depends largely on whether one can maintain a small supply of aerated blood through his respiratory center and through other important centers in the central nervous system until such time as the heart can be got going. No matter how well artificial respiration is performed, if the circulation is absent for a comparatively short time from the nerve cells in the central nervous system the patient will never live a normal life again. The great drawback to the type of artificial respiration apparatus that is used mostly in the physiologic laboratory is the fact that the use of this sort of equipment on patients can easily result in damage. It isn't at all hard to rupture the lung with a little too much pressure. Also another thing that can happen: We were using the insufflation of anesthesia method in the laboratory, and we had a manometer to control the insufflation pressure. On one occasion, we were surprised to notice that the blood pressure had dropped to zero suddenly. The insufflation pressure had risen enough so that the lungs were distended, and the circulation in the lung capillaries was completely cut off. If the circulation in the lung capillaries has been cut off, the whole circulation has been stopped. It doesn't require a great deal of pressure to distend the lungs enough, and in that way it embarrasses circulation. Only artificial respiration apparatus of the type in which air is forced in and out is going to be used by other than skilled physicians. It is going to be dangerous to use that type of thing unless it can be in the hands of very skillful operators. On the other hand, the method of putting a person in a negative pressure chamber seems to be about as safe as any procedure could be.

Practical Application to the Hospital and the Public

DR. JOHN F. McGRATH, New York: It is evident that death due to asphyxiation presents a major problem. To meet the high mortality and economic loss, it has been necessary to depend on the comparatively unsupported efforts of lay groups. It has been shown, however, that simple and direct methods of treatment by the physician may become available by a brief period of instruction and practice. The technic of laryngoscopy, suction and intubation performed with ordinary care is entirely nontraumatic. It is only by these procedures that adequate and immediate relief may be obtained for the completely asphyxiated emergency patient. It is only by this technic that oxygen and carbon dioxide may become immediately available to the impeded circulation and the depressed respiratory centers.

The foregoing consideration suggests the necessity of a coordinating agency whose duty it shall be to integrate and disseminate the facts bearing on the subject of asphyxiation. The Society for the Prevention of Asphyxial Death has been chartered for the purpose of bringing about this coordination. As a charitable organization it has no interest whatever in the sale or the popularization of any form of equipment. It is entirely nonpartisan in its medical and other affiliations, and because of this neutral position it is free to function for the direct relief of the asphyxiated patient.

By this conference, the Society for the Prevention of Asphyxial Death makes its first formal appearance as a national organization. The society plans to proceed by coordinating three broad lines of action: research, instruction and practice.

1. The coordination of research is to be accomplished through (a) the research departments of medical schools and universities, (b) the research departments of major utility corporations, (c) the research departments of private institutions and (d) the research departments of the federal and municipal governments.

Physical, chemical and biochemical problems bearing on asphyxial death will be proposed for solution to research groups at liberty to pursue the question at issue. It is hoped that funds will in time become available to underwrite the cost of such research. The results will be given wide publicity, first, through the organization contacts of the society, and secondly, by the second large activity to be encouraged; namely, instruction.

2. Instruction of first-aid methods to the layman and medical instruction to the untrained intern and practitioner presents one of the largest problems in the reduction of asphyxial death. It is hoped that this problem may be solved as follows:

(a) Publicity and continually increasing contacts are to be afforded the organized work of the Red Cross, the police department, the fire department, the Consolidated Gas, and other lay groups.

(b) Pending such time as the curriculum of the medical schools will permit of adequate instruction in modern methods of gas therapy, an effort will be made to supply such instruction to interns and practicing physicians. It is hoped that arrangements may be made whereby comprehensive lectures combined with thorough instruction and demonstration in this subject shall become available through the medical departments of the army, the navy and the Red Cross.

Hospital members of the society will be entitled to receive such instruction and supervision without additional cost.

3. Practice will bring in contact the physician and other persons who actually provide relief to the asphyxiated patient in the operating room; in the wards, in the ambulance, in general practice, in marine and industrial occupations, dentists in the course of their practice, and operating room nurse-technicians.

Clinical membership will be honorary and will be based on at least one authenticated rescue. The research, instruction and practice will become immediately available for the groups of institutions and corporations making up the membership of the Society for the Prevention of Asphyxial Death.

It will be of interest to consider the proposed organization of a coordinating agency. Groups representing common interests may be assembled as in the form of sections. For example, it is proposed to assemble a section on civic cooperation, on insurance, on medical schools, on carbon monoxide poisoning, on electrical shock, on submersion, on anesthetics, on equipment, and on other subjects. These sections will function as follows: The section on instruction, for example, would include the medical department of the army, the navy, the Red Cross and associated medical schools. It may have close contacts with the section on research. The section on carbon monoxide poisoning, consisting of gas companies, automotive engineers, mine operators, and so on, may be coordinated with the sections on research and instruction in order that it may receive without delay the conclusions of the biochemists made available through the section of instruction and the section of equipment. The section on anesthetics will be in direct contact with the section on research, on instruction and on equipment and will cooperate with the section on surgery, whose duty it will be to deal with the operative relief of extreme degrees of asphyxiation as it may be encountered in Ludvig's angina, laryngeal obstruction, and by infection inside and outside the airway, prescribing and demonstrating the operation of choice for emergency tracheotomy. And so through the section on insurance, on electricity, on asphyxia neonatorum, on submersion, on statistics, on hospitals, on civic cooperation, through cooperation will come mutual help.

The function of the society is to strengthen and deepen the effects of every agency now interested in the prevention of asphyxial death. As an initial activity designed to enlist civic cooperation and to clarify practice, it is proposed to establish a demonstration-medical ambulance service attached to a centrally located hospital.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

2: 337-372 (March) 1933

- Urologic Consideration of Focal Infections. J. U. Reeves, Mobile.—p. 337.
Child-Bearing Woman. M. S. Davie, Dothan.—p. 340.
Diabetic Coma. W. S. Hannah, Montgomery.—p. 343.
Undulant Fever: Report of Case. O. J. Brooks, Huntsville.—p. 346.
Transurethral Resection of Prostate Gland: Case Report. A. I. Dodson, Richmond, Va., and J. B. Graham, Talladega.—p. 347.
Sporotrichosis. H. R. Cogburn, Mobile.—p. 349.
*Simple Mastoid Operation. J. A. Keyton, Dothan.—p. 350.
Malaria and Paresis. J. N. Baker, Montgomery.—p. 353.

Simple Mastoid Operation.—Keyton states that the simple mastoid operation should be done early in the course of the disease to avoid the dangers of delay while waiting for more definite indications for surgery. It is not necessary to perform mutilating operations in this region if early diagnosis is made and the surgeon is not afraid to risk his judgment on his diagnosis. Simple drainage will cure the disease usually, leave no scarring to mark the site of trauma and will materially lessen the patient's stay in the sickroom or on the invalid list. The author considers the following method a sufficient operation: The skin wound is from 2.5 to 3 cm. in length, and the superficial wound is crossed at intervals with horizontal scratches for later apposition of the skin edge. The cortex is removed gently with the gouge and when the first pneumatic cells are entered a small sharp curet is used to enter the mastoid antrum, which is then irrigated with physiologic solution of sodium chloride. When adequate drainage of the antrum has been ascertained and the cells adjacent to the entrance tunnel have been explored, the bony dissection is carried far enough into the tip to assure drainage from the most dependent point. Instillations of mercurochrome or other suitable germicidal agent into the wound follows thorough irrigation of the wound cavity, the antrum and the middle ear. After this thorough cleansing and medication, the skin wound is closed with silk-worm sutures spaced closely enough to get good approximation of the wound edges, a gauze wick being brought out at the most dependent point. The wound is dressed daily, and as soon as possible the auricle is excluded from the dressing for frequent irrigation and medication of the middle ear space.

American Journal of Physiology, Baltimore

104: 1-258 (April 1) 1933. Partial Index

- Effect of Pasteurization of Milk on Utilization of Its Calcium for Growth in Rat. M. Ellis and H. H. Mitchell, Urbana, Ill.—p. 1.
Influence of Glucose and of Fructose on Effective Dead Space in Human Respiration. T. M. Carpenter and R. C. Lee, Boston.—p. 10.
*Experimental Study of a So-Called Pellagra-Producing Diet. T. D. Spies and Jean Grant, Cleveland.—p. 18.
Ovarian Responses to Prolan and Anterior Pituitary Extract in Hypophysectomized Rabbits, with Particular Reference to Ovulation. W. E. White and S. L. Leonard, New York.—p. 44.
Influence of Vagus Nerve on Esophageal Secretion. A. M. Vineberg and S. A. Komarov, Montreal, Canada.—p. 73.
Action of Insulin on Motility of Empty Stomach. J. F. Regan, Chicago.—p. 90.
*Studies in Human Neuromuscular Mechanism: I. Theory of "Subsidence of Afferent Flow" as an Explanation of "Lengthening Reaction" and Other Phenomena. P. C. Bucy and D. N. Buchanan, Chicago.—p. 95.
Effect of Abdominal Distention and Release on Blood Pressures in Arteries and Veins. W. A. Bruns, L. N. Katz and L. Kohn, Chicago.—p. 120.
*Methylene Blue as an Antidote to Carbon Monoxide Poisoning. Matilda Moldenhauer Brooks, Berkeley, Calif.—p. 139.
Cardiac Output in Hyperventilation by External Alternating Pressure. N. W. Roome, Chicago.—p. 142.
Effect of Heating Egg White on Certain Characteristic Pellagra-Like Manifestations Produced in Rats by Its Dietary Use. Helen T. Parsons and Eunice Kelly, Madison, Wis.—p. 150.
Studies of Hemostasis in Normal, Sympathectomized and Ergotaminized Animals: I. Effect of High and Low Temperatures. M. E. M. Sawyer and T. Schlossberg, Boston.—p. 172.

- Id.: III. Effect of Insulin. T. Schlossberg, M. E. M. Sawyer and E. M. Bixby, Boston.—p. 190.
Hypophysectomy in Pregnant Rabbits. W. M. Firor, Baltimore.—p. 204.
Studies on Physiology of Liver: XXV. Allantoin and Uric Acid Following Total Removal of Liver. J. L. Bollman and F. C. Mann, Rochester, Minn.—p. 242.
Effect of Feeding Desiccated Thyroid on Sexual Maturation of Albino Rat. Esther Da Costa and A. J. Carlson, Chicago.—p. 247.
Nerve Plexus Between Aorta and Pulmonary Artery: I. Observations on Its Nature and Function. L. N. Katz and O. Saphir, Chicago.—p. 253.

"Pellagra-Producing" Diet.—Spies and Grant's experiments show that the restricted diet administered to pellagrins with improvement of their skin lesions is inadequate for the proper nutrition of young rats. These animals develop the characteristic appearance of vitamin G deficiency when they are given the basal diet alone or the basal diet and casein. They are protected from this condition by the administration of the basal diet and supplements of either desiccated hog stomach or yeast. Desiccated hog stomach possesses striking therapeutic properties, as demonstrated by the rapid and apparently complete recovery of the animals from this deficiency following the administration of desiccated hog stomach. The correlation of the results obtained in the authors' experiments with those showing that desiccated hog stomach is curative for pernicious anemia suggests that the substance in desiccated hog stomach which protects the animals from this inadequate diet may be vitamin G or some closely related substance, and that this material is possibly the extrinsic factor that Castle has discussed in the development of the deficiency state of pernicious anemia.

Studies in Human Neuromuscular Mechanism.—According to Bucy and Buchanan, the theory of "autogenous inhibition" as an explanation of the "lengthening reaction" rests on too little evidence to warrant the wide acceptance which it is accorded, although tension which actually endangers the integrity of the muscle and its attachment may produce inhibitory afferent impulses capable of protecting the muscle. A theory which they have termed the "subsidence of afferent flow," originally conceived by Fulton and Pi-Suñer and supported by others, that is, that during muscular contraction induced by a single break shock there occur two volleys of afferent impulses, the first with the onset of contraction and the second during the period of relaxation, explains the cessation of action currents during active contraction of the muscle. This theory not only will adequately account for the "lengthening reaction" but also explains many of the phenomena seen during the muscular response to the stretch reflex in human skeletal muscle. It has the advantage over the theory of "autogenous inhibition" that it does not require the addition of further theoretical mechanisms for its explanation.

Methylene Blue as an Antidote.—Brooks states that injections of methylene blue into rabbits after the administration of carbon monoxide gas showed that methylene blue in an antidote for carbon monoxide poisoning. In one experiment, the animals were allowed to breathe carbon monoxide gas until respiration had stopped. After from thirty to forty-five seconds, depending on whether respiration ceased before six minutes or not, injections of methylene blue were given intravenously and artificial respiration was begun by means of a respirometer. The author observed that 20 per cent of the controls recovered, whereas 90 per cent of the treated animals recovered. The dye was effective only while circulation was still in progress. It required from two to six minutes for the animals to recover, and nine minutes in one instance.

American Journal of Public Health, New York

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- Mental Health of the Preschool Child. I. S. Wile, New York.—p. 191.
Are "Nerves" and Badness of Childhood of Any Importance to the Field of Public Health? Esther L. Richards, Baltimore.—p. 198.
Mental Hygiene of Adolescence. W. A. White, Washington, D. C.—p. 206.
Aims and Accomplishments of a Health Center Mental Hygiene Program. Elizabeth I. Adamson, New York.—p. 211.
Effects of Air Contaminants on Natural Light of Cities. H. B. Meller and Mary E. Wurga, Pittsburgh.—p. 217.
*Antirachitic Activation of Milk by Direct Irradiation with Ultraviolet Rays. G. C. Supplee, Bainbridge, N. Y.—p. 225.
Production of Antirachitic Milk by Feeding of Dairy Cattle. J. G. Hardenbergh and L. T. Wilson, Plainboro, N. J.—p. 230.
Relationships of Leukocytes and Streptococci to Fibrosis of Udder. G. J. Hucker, Geneva, N. Y.—p. 237.

Titration of Neutralizing Potency of Antimeningococcus Serum by Phenomenon of Local Skin Reactivity. Grace M. Sickles, Albany, N. Y.—p. 259.

Some Variants of *Bacillus Megatherium*. G. Knaysi, Ithaca, N. Y.—p. 260.

Antirachitic Activation of Milk.—Supplee emphasizes the fact that, since milk is the sole or major article of the diet of every child during the age of greatest susceptibility to rickets, the desirability of having available a milk containing an adequate amount of vitamin D for the prevention or cure of rickets is at once obvious. Such a product would provide a new type of prophylaxis, simple in application, economical and entirely free from the inherent handicaps involved in the use of the better known specifics. Such an achievement presupposes the correlation and control of basic factors concerned in the irradiation technic. The industrial application of methods for the direct irradiation of milk must take into account numerous interrelated factors. Facilities must be provided for the exposure of large volumes of milk to suitable ultraviolet radiations within short periods of time. In order that the cost of the treatment may be kept to the lowest possible minimum, the accessory equipment must be simple in construction and susceptible of efficient and uniform operation without the necessity of providing especially trained or skilled labor.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

29: 437-584 (April) 1933

Hypertrophy of Pyloric Muscle of Adults: Distinctive Roentgenologic Sign. B. R. Kirklin and M. T. Harris, Rochester, Minn.—p. 437.

Behavior of Hormone of Anterior Hypophysis in Case of Teratoma Testis. R. S. Ferguson, New York.—p. 443.

Roentgen Findings in Splenomegaly. J. E. Habbe, Milwaukee.—p. 449.

Roentgen Pelvimetry. J. N. Ewer and C. B. Bowen, Oakland, Calif.—p. 462.

Nature of Tubo-Uterine Sphincter: Experimental Study. M. K. Butofsky, Tomsk, Siberia, U. S. S. R.—p. 469.

*Multiple Myeloma: Evaluation of Its Roentgen Signs. N. Flax, Ann Arbor, Mich.—p. 479.

Persistence of Carcinoma in Cervix Uteri After Irradiation. D. G. Morton, San Francisco.—p. 487.

*Benign Uterine Hemorrhage: Its Treatment with Radium. H. H. Bowring, R. E. Fricke and A. U. Desjardins, Rochester, Minn.—p. 497.

Fate of Fibromyoma of Uterus After Radiotherapy. J. A. Corscaden, New York.—p. 511.

*Treatment of Benign Uterine Neoplasms, with Especial Reference to Use of Radium. O. L. Norsworthy, San Antonio, Texas.—p. 516.

Congenital Atresia of Esophagus with Tracheo-Esophageal Fistula: Case Report. J. Friedman, Montreal, Canada.—p. 527.

Charcot's Disease of Elbow Joint. C. H. Warfield, Chicago.—p. 530.

Multiple Myeloma.—Flax believes that the following criteria constitute the most reliable basis for a diagnosis of multiple myeloma: 1. Clinically, the history of acute (or, less commonly, gradual) onset of pain in the bones of the trunk, a chronic nephritis without increased blood pressure or retention of non-protein nitrogen, the finding of Bence-Jones protein, and a progressive anemia. 2. In the roentgenogram, the widespread distribution of multiple, sharply circumscribed defects in the marrow cavities of the bones of the trunk with high incidence of pathologic fracture and deformity. Other diseases sometimes to be considered in the differential diagnosis are: 1. Osteomalacia, which usually occurs in pregnant women and never shows rarefaction in the cranial bones. The absorption of calcium salts is diffuse, whereas the rarefactions in multiple myeloma are localized. Deformities in osteomalacia are due to bending of the softened bones, but in multiple myeloma the deformities are due to poor alignment of true fractures. 2. Endothelioma, which, when multiple, may be confused with multiple myeloma because of the similar distribution in ribs, vertebrae, skull and cancellous portions of the long bones. It can be distinguished, nevertheless, from the radioresistant multiple myeloma in its sharp initial response to irradiation. Further, endothelioma more commonly occurs in younger persons. 3. Paget's disease, or osteitis deformans, which as a fibrotic degeneration of bone with subsequent recalcification shows in the degenerated areas diffuse striations and trabeculations with new bone formation. This reformation of bone is never observed in multiple myeloma. 4. Syphilis, which, in the form of disseminated lesions, always shows soft tissue reaction and adjacent bone production. 5. Lymphosarcoma of bone, which, although extremely rare, might be confused with multiple myeloma in the similar distribution. However, the individual tumors are more irregular and lack the "punched-out" appearance of multiple myeloma. 6.

Chloroma, which is considered to fall in the same category as multiple myeloma. Grossly, the sectioned chloroma presents a characteristic, iridescent greenish color, while the myeloma is red; also, in chloroma, sternal and substernal involvement is extensive. Chloroma occurs in younger persons and is associated with a leukemia.

Uterine Hemorrhage.—Bowring and his associates report the results they obtained in the treatment of 418 patients whom they treated with radium for benign uterine hemorrhage. Patients whose uterus was larger than that produced by a four and a half months pregnancy or which contained fibroid tumors forming a pelvic mass of this size were not accepted as a rule for treatment with radium. From this study the authors conclude that, for benign hemorrhage of the menopause not related to uterine fibromyoma, intra-uterine treatment with radium is practically a specific. The major contraindication is the history or the presence of adnexal inflammatory disease, and with this complication both vaginal and external treatment with radium has proved a safe procedure in a limited number of cases. Among patients of the younger age groups, bleeding can be controlled and the condition cured by intra-uterine application of radium in the majority of cases; however, in a small percentage of cases premature menopause will occur in the presence of hypo-ovarian function that is not recognizable beforehand. Therefore the possibility of permanent amenorrhea and loss of reproductive power must be explained to the patient before treatment, and it is wise to employ all possible medical and minor surgical measures first. If radium is used, a small dose should be given, with a repetition in a few months if the desired effect is not attained. If radium fails, the final recourse is surgery. In the treatment of fibroid tumors causing menorrhagia, the selection of cases is too conservative. Intra-uterine treatment with radium, in conjunction with external application of radium or roentgen rays, affords good results even with large fibromas and is worthy of consideration if the pelvis is otherwise normal and the surgical risk excessive. If the diagnosis is at all questionable, operation is preferable. There is also a large group of patients with fibromas whose hemoglobin is of low concentration and whose resistance is so diminished that they constitute poor surgical risks; treatment with radium and roentgen rays, if not curative in itself, will build these patients up so that they are more suitable for subsequent operation. Therefore in the control of menorrhagia one has three agents at hand, and the results obtained depend on the careful selection of the method of treatment in the individual case.

Treatment of Uterine Neoplasms.—Norsworthy states that, in benign uterine neoplasms, the chief method of treatment should be considered under four divisions: (1) observation, (2) operation, (3) roentgen rays and (4) radium. A uterine neoplasm producing no symptoms, especially if indurated and nodular, should be let alone and observed. Removal by operation is indicated in the majority of cases encountered in general practice. Neoplasms calling for removal by operation are: (1) those larger than a four months pregnancy unless the physical condition of the patient is a contraindication; (2) calcified tumors, (3) pedunculated tumors, (4) tumors associated with symptoms of impaction, (5) tumors accompanied by inflammatory or adnexal disease, (6) tumors associated with acute or chronic pelvic infection, and (7) some cases of definite neurasthenia (radium phobia). Myomectomy and subtotal hysterectomy are the two operations of choice. While myomectomy has a greater operative mortality, it should be favored in young girls and child-bearing women. When myomectomy and subtotal hysterectomy fail to relieve the chief symptom for which the operation was performed, that is, hemorrhage, radium is indicated. Radium applied within the uterus is indicated: (1) in small neoplasms accompanied by hemorrhage, (2) in selected cases of large neoplasms, and (3) in operative cases when the patient is too ill for an abdominal operation. Radium will control hemorrhage, produce the menopause, arrest the growth of the neoplasm and reduce its size and, in a large majority of cases, cause complete disappearance of the neoplasm. In young girls or child-bearing women, radium may be used to check excessive menstruation temporarily, care being exercised that permanent menopause or injury to the ovaries is not brought about. Hysterectomy should be considered only in cases in which myomectomy would be unsafe and in which radium is contra-

indicated, except in women who prefer removal of the uterus to the use of radium. Sufficient radium irradiation to check the growth permanently or to remove a tumor would probably destroy the ovarian function and should be carefully guarded in child-bearing women. The successful use of radium in non-malignant neoplasms of the uterus is largely dependent on accurate diagnosis, properly selected cases, correct graduation of dosage, and the technic of application. The author found radium to be uniformly satisfactory in 287 cases of benign uterine tumors. In his 287 cases, a vaginal discharge persisted for from three weeks to several months, but the discharge ceased eventually in all cases. There were no deaths. The minimum dose used was 400 mg. hours and the maximum 4,800 mg. hours.

Archives of Dermatology and Syphilology, Chicago

27: 549-724 (April) 1933

Drug Eruptions: I. Fixed Phenolphthalein Eruptions. F. Wise and Marion B. Sulzberger, New York.—p. 549.
Effect of Menstruation on Incidence of Dementia Paralytica. R. Hecht, Chicago.—p. 568.

Lenard or Cathode "Ray" Dermatitis. S. Crawford, Pittsburgh.—p. 579.
Sulphur Content of Hair and of Nails in Abnormal States: Therapeutic Value of Hydrolyzed Wool: I. Hair. H. Brown and J. V. Klauder, Philadelphia.—p. 584.

*Lingual Purpura: Report of Case. H. Rattner, Chicago.—p. 605.
Trichophytosis, Including Onychomycosis Universalis, Simulating Tinea Imbricata: Report of an Unusually Extensive Case. H. E. Kittredge, Washington, D. C.—p. 607.

Postoperative Gangrenous Ulcer of Abdominal Wall: Report of Case with Special Notes on Treatment. W. W. Duemling and R. W. Elston, Fort Wayne, Ind.—p. 624.

Mycosis Fungoides: Report of Case with Autopsy. O. S. Ormsby and C. W. Finnerud, with collaboration of C. Apfelbach, Chicago.—p. 631.
Lymphoblastoma (Mycosis Fungoides) and Hemorrhagic Sarcoma of Kaposi in the Same Person. C. G. Lane and A. M. Greenwood, Boston.—p. 643.

Volatile Sulphide in Ointment Form. E. Clark, Evanston, Ill.—p. 658.
Hot Baths in Experimental Primary Syphilis of Rabbits and in Trypanosomiasis of Rats. J. A. Kolmer and Anna M. Rule, Philadelphia.—p. 660.

Symmetrical Lividities of Soles. H. J. Parkhurst, Toledo, Ohio.—p. 663.
Tularemia: Disease of Increasing Dermatologic Importance. A. J. Markley, Denver.—p. 666.

Dosage of Skin Therapy Expressed in International Roentgen Units. J. J. Eller and A. Mutscheller, New York.—p. 670.

Lingual Purpura.—Rattner reports a case of lingual purpura in which the lesions of the tongue were so unusual as to make a clinical picture with which he was entirely unfamiliar. The patient, a mulatto, aged 20, was bitten on the forearm by an insect. The following day, purpuric lesions developed on the tongue, buccal mucous membranes, lips, pharynx, shoulders and legs. The lesions on the tongue were vesicular. None of the lesions caused discomfort. When the patient was seen again in three days, those in the mouth had disappeared, leaving no traces, and those on the skin were undergoing resolution.

Canadian Medical Association Journal, Montreal

28: 357-470 (April) 1933

Experimental Study of Pulmonary Embolism. G. E. Hall and G. H. Ettinger, Toronto.—p. 357.

Operative Treatment of Spontaneous Intracerebral Hemorrhage. W. Penfield, Montreal.—p. 369.

Harelip. H. O. Foucar, London, Ont.—p. 373.

*Creeping Eruption, with Especial Reference to Cutaneous Myiasis and Report of Case. G. V. Bedford, Winnipeg, Manit.; D. H. Williams, London, Ont., and M. V. B. Newton, Winnipeg, Manit.—p. 377.

Unusual Clues to Diagnosis of Typhoid Fever. E. G. Simmonds, Panoka, Alta.—p. 382.

Staphylococci Infections in Diabetes. J. A. Gilchrist and S. L. Alexander, Toronto.—p. 386.

Hyperemesis Gravidarum Treated as a Temporary Adrenal Cortex Insufficiency. W. N. Kemp, Vancouver, B. C.—p. 389.

Ulcers of Esophagus. W. L. Ritchie, Montreal.—p. 392.

Heredity as an Aid to Modern Therapy. Madge Thurlow Macklin, London, Ont.—p. 394.

*Solanium Tuberosum. H. P. Wright and C. M. Kirk, Montreal.—p. 398.
Findings of Special Clinical Interest Revealed at Postmortem Examinations. W. J. Deadman, Hamilton, Ont.—p. 401.

Spinal Anesthesia. R. M. Tovell, Rochester, Minn.—p. 404.

Creeping Eruption and Myiasis.—Bedford and his associates report a second case of cutaneous myiasis observed in Manitoba and due to the first stage larva of *Gastrophilus intestinalis*. "Creeping eruption" is not an etiologic entity. At least seven different parasites have been found to be the cause of this skin condition. First stage larvae of *Gastrophilus*, the botfly, have been recovered in less than a dozen cases and reported in the literature. These cases have been found in the temperate zone of the United States, in Canada and in European countries.

Larvae from cattle grub flies also cause a "creeping eruption." Their tumors are deeper and larger than the *Gastrophilus* infections. Nematode infection due to *Gnathostoma* has been reported from the Orient. The thousands of cases reported from the Southern states have been due to *Ancylostoma braziliense*, the dog and cat hookworm, and it is considered by some authors that this may be the etiologic factor in most of the cases reported from tropical countries. In treating the eruption due to the *Gastrophilus* larvae it is essential that the onward course of the parasite be blocked. The larva should be removed if it can be seen. If the parasite cannot be located, excision or cauterization of the active end of the lesion should be tried. The injection of from 1 to 2 cc. of a 3 or 5 per cent solution of phenol has been used. Freezing by means of the ethyl chloride spray and carbon dioxide snow has been advocated. As there is usually some secondary staphylococcal infection from scratching, the use of mild antiseptic applications, such as weak ammoniated mercury ointment, a 2 per cent solution of mercurchrome, tincture of iodine or surgical solution of chlorinated soda may be necessary.

Solanum Tuberosum.—During the last six months, Wright and Kirk fed twelve babies, varying in age from 6 weeks to 6 months, on diets containing a large amount of baked potato. The potatoes were baked in their jackets for two hours in the oven of an ordinary large coal range. Immediately before feeding, the potatoes were opened and as much as possible of the potato flour removed. The following rules were observed: 1. Modified boiled whole milk formulas with the addition of sugar were employed. 2. Every infant received daily one dessert-spoonful of cod liver oil with viosterol 10 D. 3. Potato flour was offered twice daily, the amount not being restricted. (No orange juice or other antiscorbutic food was given.) 4. Iron was given daily to prevent the development of food anemia. No unusual discomfort, diarrhea or vomiting was observed. No scurvy has as yet made its appearance. One infant seemed irritable and early scurvy was suspected, but roentgenograms yielded negative results. Frequent blood counts have failed to demonstrate anemia. On the basis of their observations, the authors conclude that the potato can be satisfactorily substituted for cereal in infant feeding, and that, when used in about the same amount as cereal is ordinarily employed, it prevents the occurrence of scurvy.

Endocrinology, Los Angeles

17: 123-238 (March-April) 1933

*Clinical Use of Gonadotropic Substance in Women: I. Treatment of Sexual Immaturity with Concentrated Preparations from Pregnancy Urine. E. L. Sevringhaus and Madeline J. Thornton, Madison, Wis.—p. 123.

Pituitary Cachexia: Report of Patient Treated with Anterior Pituitary Extract. J. C. Brougher, Vancouver, Wash.—p. 128.

Menopausal Epilepsy: Report of Case. R. L. Schaefer and W. L. Brosius, Detroit.—p. 133.

*Treatment of Clinical Tetany with Irradiated Ergosterol. C. I. Reed and L. Seed, Chicago.—p. 136.

Does Anterior Hypophyseal Substance Prepared from Pregnancy Urine Raise Blood Sugar Level? E. Dingemans and S. Kober, Amsterdam, Netherlands.—p. 149.

Relation of Thyroid to Hypophysis and Ovary. W. M. Van Horn, Madison, Wis.—p. 152.

Rat Seminal Vesicles and Prostate Glands as Quantitative Indicators of Testicular Hormone. I. B. Hansen, Chicago.—p. 163.

Irreversibility in Adrenal Insufficiency. F. A. Hartman and C. A. Winter, Buffalo.—p. 180.

Experimental Studies on Hypophysis Cerebri: I. Effect of Single Pregnancy in Albino Rat. S. I. Stein, Minneapolis.—p. 187.

Treatment of Sexual Immaturity.—Sevringhaus and Thornton gave twenty-three women who were sexually infantile, or had had long periods of amenorrhea or oligomenorrhea, concentrated preparations from human pregnancy urine. At least ten of the patients were stimulated to more regular and copious menstruation. Results were doubtful in seven and negative in six others. Hirsutism in fourteen of these women was not relieved. The urine extracts were given hypodermically five times daily. Each injection consisted of 1 cc. They were given for the first five days after the cessation of each menstrual period. When no menses were present to fix a time, the treatment was given at intervals of four weeks, five days at a time. The authors advise too little rather than too much treatment, since urine extracts are known to contain factors that stimulate luteinization and may cause the formation of atretic follicles. The only local reaction to the use of this

lifted up from the chest wall to serve as a handle. The dissection is continued until the entire muscle is detached, enabling the surgeon to detach and lift up the entire mammary gland without handling it at any time. The pectoralis minor muscle is next removed in a manner similar to that of the major. The cut surfaces of the muscles are carefully seared and further protection by warm pads now becomes necessary. The next step consists in the anatomic cleaning of the axilla. The authors insist on primary exposure of the axillary vein for a distance of about 2 inches, and block dissection of the axillary space. All branches of the axillary vein and artery, which run almost perpendicular to the direction of the vessels, are clamped with mosquito forceps and ligated with 00 catgut. Dissection is started from the axillary vein toward the axillary pit and the upper end of the arm, taking everything in its course except the respiratory nerve of Bell. The entire mass is removed. Additional cleaning of fat now becomes necessary above the axillary vein and perhaps toward the insertion of the serratus magnus muscle. This completes the essentials of the operation, as it presumably removes all the local pathologic structures. The cut surfaces of the pectoralis stumps as well as their surfaces are seared again. Finally the lower part of the incision is gone over with the high frequency knife until the upper end of the rectus muscle is exposed. Fascial coverings are incised with the knife perpendicular to the long axis of the rectus muscle, curving the incision inward and outward until the chest grooves are encountered, in order to cut off lymphatic connections between the sheath of the rectus muscle and the chest wall. A stab wound is made in the flap of the axillary line and a large cigaret drain inserted. The skin is approximated with silkworm gut only at two points, the rest of the incision being put on stretch and approximated with skin clips. The authors believe that the removal of the breast without handling it at any time obviates carcinomatous implants. Sealing all the margins of the incision and cutting off the fascial connections with the serratus magnus and especially the rectus muscle insures against local recurrence and early atypical lymph node metastases, such as those in the liver and pleura.

Treatment of Peptic Ulcer with Okrin.—Although the observation of Jones and his associates on the effect of okrin treatment in three patients suffering from intractable peptic ulcer has been of short duration, they believe that the results will be of interest. Because okrin relieved pain in their three patients who were not being relieved by other treatment, they believe that it has a palliative action which may be of value. The material was prepared as follows: Okra pods were washed and then ground in a food chopper, and the ground material stirred into ten volumes of warm water. After the mixture had been allowed to stand from one-half to one hour, it was strained through muslin. The residue was soaked again in water and strained. The extracts of the two strainings were combined, and 95 per cent ethyl alcohol was added to make a 50 per cent alcohol solution. The mucilaginous material gathered into long, tough strands, which were worked together and removed from the solution. This material was washed repeatedly with 95 per cent ethyl alcohol, then ground in alcohol, filtered from the alcohol, and washed with ethyl ether. It was necessary to remove the alcohol completely and quickly to keep the finished material from becoming insoluble. The material was dried and ground in a mortar to a fine gray powder. The amount of okrin given was a teaspoonful in water or milk every hour while the patients were awake. Pain, abdominal tenderness, nausea and vomiting disappeared in from two to three days.

Journal of Industrial Hygiene, Baltimore

15: 57-115 (March) 1933

- Studies in Dust Retention: IV. Dust Retained by Tracheotomized Cat. T. Ishikawa and P. Drinker, Boston.—p. 57.
*Effects of Certain Silicate Dusts on Lungs. W. C. Dreesen, Washington, D. C.—p. 66.
Dealing with Syphilis and Gonorrhea as Industrial Problems. W. Clarke, New York.—p. 79.
Relative Fatigue Recovery Value of Different Carbohydrate Blends and Mixtures. D. A. Laird, Hamilton, N. Y.—p. 89.
Air Conditioning with Relation to Comfort, Health and Efficiency. E. R. Hayhurst, Columbus, Ohio.—p. 98.

Effect of Silicate Dusts on Lungs.—Dreesen studied the effect of silicate dusts on sixty-one men employed in tremolite talc and eighty in slate plants. In the clinical examination of

the tremolite talc group of workers, no cases were encountered that presented symptoms or signs of active pulmonary tuberculosis; and in the slate group only one person had clinically active pulmonary tuberculosis. Bronchitis was present in only 5 per cent of each group. No cases of cardiac decompensation were found. Disorders of the upper respiratory tract and enlarged tonsils were present in about the same proportion as is observed in the industrial population generally. In interpreting the roentgenograms, designation of the first, second or third stage of pneumoconiosis was made. Of the forty-eight cases of pneumoconiosis, all except five were in the first stage. The pneumoconiosis observed in the early or first stage cases resembled that induced by cement dust. The bronchial striations, however, were somewhat more prominent. There was always a moderate bilateral increase in the size and density of the hilar shadows with accentuations of bronchial striations, which extended well out into each lung field. The linear striations seemed "softer" in appearance and lacked some of the sharpness of detail that is usually observed in the roentgenograms of persons who have inhaled silica dust. This diffuse, fine, generalized fibrosis was chiefly confined to the lower two thirds of the lung fields.

Journal of Urology, Baltimore

29: 361-504 (April) 1933

- Personal Observations in Prostatic Resection. H. N. Dorman, Washington, D. C.—p. 361.
Comparison of Clinical and Pathologic Characteristics of Fifty Prostatic Bars and Scleroses. E. L. Keyes, A. Fraser and A. M. McLellan, New York.—p. 383.
*Vas Deferens, Generally Unrecognized Clinical Entity in Urogenital Disease. A. L. Wolbarst, New York.—p. 405.
Suppurative Infection of Testis: Report of Unusual Case. A. G. Fleischman, Des Moines, Iowa.—p. 413.
Histologic Study of Testes in One Hundred Autopsies. A. E. Bothe and E. K. Robinson, Philadelphia.—p. 425.
*Embryonal Sarcoma of Kidney in Children: Report of Two Cases. F. W. Harrah, Columbus, Ohio.—p. 445.
Myeloma, Associated with Renal Impairment. B. H. Hager, P. B. Roen and A. Peterson, Los Angeles.—p. 475.
Postoperative Antisepsis: Preliminary Report on Use of Ambazin with Series of Controls. M. Sabel, Philadelphia.—p. 491.

Study of the Vas Deferens.—Wolbarst's study of the vas deferens deals with two phases of the subject: a type of sterility due to stenosis of the vas without pathologic changes at either end, or to the isolation of pathogenic organisms in the vas. It is based on 124 vasotomies done in the last five years. In seventy-nine cases there was a history of gonorrhea. In all but twenty-seven cases, pathologic changes in the vesicles were distinctly evident and constituted the main indication for the vasotomy. Sterility was the complaint for which treatment was sought. The striking feature of these cases was the fact that there was no history or evidence of gonorrhea or other urethral infection. The vesicles were declared "apparently" normal owing to the absence of physical abnormality when examined by rectum, the absence of pus in an appreciable amount in the expressed vesicular secretion, and the absence of gross pathologic changes in the verumontanum and posterior urethra on urethroscopy. As all the patients were vigorous men between 25 and 39 years of age, it was concluded that the absence of sperm from the semen was not due to any failure or deficiency in spermatogenesis in the testes but rather to an obstruction to their passage outward, either in the vas or in the ejaculatory ducts. On the tentative diagnosis of stenosis of the vas, the author performed exploratory vasotomy to determine the location of the obstruction and to remove it if possible. The vas was exposed as close as possible to the epididymis, a fine puncture made in its wall and a piano wire or filiform introduced as far as it would go. This was followed by the injection of sterile water with the object of forcing the fluid through the stenosis or carrying the obstructive material along through the ejaculatory ducts to the posterior urethra and bladder. Bilateral stenosis was found in every one of the twenty-seven cases and thus established as the cause of the sterility. In twenty-three, the stenosis was located within 10 inches of the epididymis. In the remaining four, further investigation pointed to the ejaculatory ducts as the site of the stenosis. In sixteen cases, the fluid was eventually forced through the obstruction on one side with more or less difficulty; in six, on both sides; in five, the obstruction was not relieved on either side. When penetration of the stenosis

occurred, it was at once made evident by the diminished resistance to the flow. The author concludes that the vas deferens may escape infection when infection is present at either end or surrounding it; that it may be infected when there is no apparent infection at either end or surrounding it; that it may be a nidus for pyogenic organisms heretofore unreported in the vas, and that influenza and other systemic infections may possibly be a frequent, unrecognized factor in the production of a focal infection in the vas with resulting stenosis and sterility.

Embryonal Sarcoma of Kidney in Children.—Harrah points out that malignant tumor of the kidney should be looked for when there is progressive enlargement of the abdomen in a baby or young child. In many cases the abdominal enlargement is the only symptom for a long time. The usual absence of pain and hematuria, particularly the latter, early in the growth of the tumor is unfortunate from the standpoint of early diagnosis. The absence or late appearance of hematuria in renal tumor in childhood may be connected with the growth capacity of the young kidney, which enables its structures to keep pace with the growth of the tumor and thus to preserve their continuity for a long time. The author believes that the best results can be obtained with a combination of radiotherapy and surgery. He reports two such cases, in one of which the tumor was a recurrence after roentgen therapy. This tumor weighed 12 pounds and was the result of six months' growth after the onset of symptoms. It was present in a child, aged 2. The tumor in the other case was of still more rapid growth; it reached a weight of 7 pounds in a period of five weeks from the first observation of an enlargement of the stomach. Nephrectomy was done in both cases, and in both the tumor recurred and the children died a few months after the operation.

Military Surgeon, Washington, D. C.

72: 277-363 (April) 1933

- Postwar Developments in Medical Aspects of Chemical Warfare. A. R. Koontz.—p. 277.
Modified Technic for Periarterial Sympathectomy. G. G. Montemayor.—p. 288.
*Clinical Use of Fever in Treatment of Syphilis. W. L. Wilson.—p. 292.
Disability Discharges. G. F. Lull.—p. 297.
The Problem of the Diabetic. J. E. Goldthwait.—p. 304.
Faulty Food and Susceptibility to Infection. V. E. Levine.—p. 307.
Relation and Value of Postmortem Examinations to Welfare of the United States Army. H. E. Robertson, p. 319.
Biopsy in Mammary Cancer. J. Ewing.—p. 322.

Treatment of Syphilis.—Wilson reports the results obtained by pyretotherapy in nineteen patients suffering from syphilis of the central nervous system in whom fever was produced by the following method: The patient is examined thoroughly in order to exclude cases of pulmonary and cardiac lesions, and of kidney diseases. Eyeground examinations for the present condition of the fundi and retinas should be invariably recorded, and repeated at weekly intervals during the treatment. The patient is given a course of trypanamide injections concurrently, consisting of ten injections of 2 Gm. each. The patient is given fever by intravenous injections of ordinary U. S. Army typhoid vaccine, the author always using the oldest stock, as the fresh vaccine has not produced fever satisfactorily. The vaccine is given in divided doses every other day until the patient has had ten days of fever. As Nelson suggested, the typhoid vaccine in divided dosage produces higher than the same total amount in one injection. Half of the desired dosage for the day is given, and (after experimentation to ascertain a desired time interval) the remainder is given two hours later. In from two to three hours after the second injection the peak of the temperature is reached, and in from seven to nine hours the temperature has dropped back to normal. On the first day 0.1 cc. of this vaccine, containing 100,000,000 killed bacteria, is given at each injection. At each successive treatment thereafter the dosage is increased by 0.1 cc., until on the tenth day each of the two injections contains 1 cc. or one billion killed bacteria. The patient is kept on a liquid diet on fever days. The common discomforts of fever (chills, headache, epigastric pain, nausea, vomiting, sweats) are present on fever treatment days. The author made a check up on seven of the nineteen patients six months after the treatment, as well as on two others immediately at the end of the treatment. Definite benefit has been shown, at least for the present. The idea of benefit

is based on the subjective report, the improvement or disappearance of positive physical signs, and the favorable change in the spinal fluid reports and in the blood serum reactions.

New York State Journal of Medicine, New York

33: 427-492 (April 1) 1933

- Lead Encephalopathy: Clinicopathologic Study. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 427.
Mechanism and Management of Hemorrhagic Disturbances in Infancy and in Childhood. I. N. Kugelmass, New York.—p. 434.
*Significance and Treatment of Pyuria in Children. J. R. Wilson, Syracuse.—p. 447.
Problems of Labor. E. E. Bunzel, New York.—p. 450.
Atresia of Vagina. A. M. Dickinson, Albany.—p. 455.

Pyuria in Children.—Wilson believes that there is sufficient evidence to warrant the attachment of a greater significance to pyuria as it occurs in infancy and also in childhood. For many years it was assumed that inflammation of the pelvis of the kidney was responsible for pyuria in most of the cases diagnosed "acute pyelitis." But this was an unproved assumption. From data now available it is apparent that the pyuria of the type ordinarily so diagnosed is due, in the majority of cases, to suppurative interstitial lesions of the kidney tissue itself. Hence a new significance is attached to the case of so-called acute pyelitis. The treatment of so-called acute pyelitis has been directed chiefly toward the urine and the urinary tract below the kidney. This fact perhaps accounts for many of the discouraging therapeutic results. With the establishment of the pathologic basis of the condition it is possible that more effective therapeutic procedures may be developed. Rest and quiet and fluids apparently still remain the most important factors in the treatment of so-called acute pyelitis. In patients who do not respond to treatment after a reasonable length of time, the urinary tract should be investigated for possible obstructions, and, if such a condition exists, it is often possible for a skilled urologist to relieve it. In children who suffer from recurrences of pyuria but in whom obstruction to the outflow of urine cannot be demonstrated, the evidence suggests that treatment should be prolonged in order to induce complete healing. Prolonged rest and quiet seem to be of special importance here. In this manner the foci of chronic inflammation which persist in the kidney substance may go on to complete healing, thus rendering recurrences less probable.

Oklahoma State Medical Assn. Journal, Muskogee

26: 71-102 (March) 1933

- *Chronic Indigestion. J. L. Patterson and E. C. Lindley, Duncan.—p. 71.
Diagnosis and Treatment of the More Common Acute Abdominal Conditions. R. Fisher, Frederick.—p. 75.
Roentgen-Ray Therapy in Graves' Disease. L. S. McAllister, Muskogee.—p. 78.
Use of Iodized Oil in Diagnosis of Chronic Maxillary Sinusitis. A. H. Davis, Tulsa.—p. 81.
Phrenicectomy as an Aid in Treatment of Pulmonary Tuberculosis. F. Moorman, Oklahoma City.—p. 84.
Method of Determining Percentage of Partial Permanent Disability for Oklahoma State Industrial Court. E. D. McBride, Oklahoma City.—p. 87.

Chronic Indigestion.—Patterson and Lindley state that "indigestion" is a much abused term commonly used to cover all forms of stomach disease. Diagnosis of the basis of the patient's recital of symptoms without physical examination or analysis of the gastric contents or a roentgen series is too common. This explains the readiness with which practitioners resort to such terms as "indigestion," "dyspepsia," "catarrh of the stomach" or the equally indefinite term "stomach trouble" as a diagnosis. Intra-abdominal diseases most commonly giving rise to "dyspeptic" symptoms are cholecystitis, peptic ulcer, malignant disorders of the gastro-intestinal tract, colitis and chronic appendicitis, while those of extra-abdominal origin are pernicious anemia, pellagra, sprue and combined systemic disease. Unrelated conditions with "dyspeptic" symptoms as occasional secondary manifestations are acute infections, chronic infections (especially tuberculosis), circulatory and renal diseases, metabolic diseases, diseases of the genital organs, and functional and organic diseases of the central nervous system. The ideal routine of examination of patients suffering from gastro-intestinal disturbances includes a meticulous history, complete physical examination, roentgen series of

the gallbladder after tetra-iodide administration, gastric analysis of the fasting contents and after a test meal, and a complete gastro-intestinal roentgen series. After such a procedure, little of importance can escape one's attention and the percentage of one's mistakes is lowered to a minimum.

Public Health Reports, Washington, D. C.

48: 319-346 (March 31) 1933

Production of Malignant Growth in Guinea-Pig. T. J. Glover and J. L. Engle.—p. 319.

Sickness Among Male Industrial Employees During Final Quarter of 1932. D. K. Brundage.—p. 322.

48: 347-374 (April 7) 1933

Action of Heavy Metals on Cysteine and on Sulphydryl Groups of Proteins. S. M. Rosenthal and C. Voegtlin.—p. 347.

Radiology, St. Paul

20: 155-240 (March) 1933

Some Roentgen-Ray Studies of Circulation. W. J. Meek, Madison, Wis.—p. 155.

Clinical Value of Roentgen Measurements of Heart Size. F. J. Hodges, Ann Arbor, Mich.—p. 161.

Hypodermolitis: Reports of One Localized Case and One Generalized Case. C. E. Piersall, Reno, Nev.—p. 164.

Roentgen-Ray Sign in Diagnosis of Reducible Esophageal Orifice Hernia. J. R. Carty, New York.—p. 174.

Roentgen Consideration of Common Congenital Anomalies as Related to Injuries. L. J. Gelber, Newark, N. J.—p. 177.

Roentgenologic Examination of Nasal Accessory Sinuses in Infants and Children. F. K. Herpel, West Palm Beach, Fla.—p. 181.

*Value of Multiperforated Screen in Deep Roentgen-Ray Therapy: Preliminary Report on New Method of Delivering Multiple Erythema Doses Without Permanent Injury to Skin. F. Liberson, New York.—p. 186.

Effect of X-Rays on Bacteria in Mediums of High Specific Gravity: Preliminary Report. W. A. Johnston, Dubuque, Iowa.—p. 195.

Clinical Significance of Duodenal Stasis. S. A. Portis, Chicago.—p. 201.

Simple Integrating Dosis Measuring Instrument. A. Mutscheller, New York.—p. 207.

Roentgen Ray in Diagnosis of Renal Tumors and Polycystic Kidneys. J. R. Caulk, St. Louis.—p. 209.

*Treatment of Carcinoma of Thyroid Gland. J. deJ. Pemberton and R. E. Fricke, Rochester, Minn.—p. 213.

Multiple Erythema Doses Without Injury to Skin.—Liberson outlines a method of delivering multiple erythema doses without permanent injury to the skin, in which he uses a multiperforated sheet of lead from 1.5 to 2 mm. in thickness, with uniform perforations regularly spaced and comprising a definite percentage of the total square area. This perforated lead sheet is placed on the skin. The perforations obviously can be of different sizes and shapes, exposing more or less of the skin to direct radiation, and leaving greater or smaller isthmuses of normal skin, protected by lead, to act as centers of healing in case the radiation is of such magnitude as to cause ulceration of the irradiated skin. The dosage may be divided by having two holes of the perforated lead sheet of slightly different shape. These variations allow the marking of the skin with mercurochrome or any other dye nonopaque to the x-rays, in order that the perforator may be replaced over exactly the same area at the next session of the treatment. This enables the delivery of the total dose in more than one sitting. Sometimes a paraffin cast must be made and placed against a movable part, such as the neck or an arm, in order to assure the same position of flexion of the parts at subsequent sessions. The author observed that, since the remote effect on the skin of both rabbits and man is the same when three or four times as much radiation is delivered through the perforator as without it, the underlying tissue actually receives one and a half to two times as much radiation with the perforator as without it. Because of the increased dosage obtainable without permanent injury to the skin, the author proposes this method for the treatment of selected cases of malignant conditions.

Treatment of Carcinoma of the Thyroid.—Pemberton and Fricke base their study on the comparison and evaluation of different methods of treatment that have been employed in the Mayo Clinic. Carcinoma of the thyroid occurs in three distinct types: (1) papillary adenocarcinoma, (2) adenocarcinoma in adenoma, and (3) diffuse scirrhous adenocarcinoma. The group of patients selected for their study consists of 161 patients treated from 1921 to 1926, inclusive. They were chosen to enable them to determine the remote results of treatment over a period of from five to ten years. On analyzing the type of treatment given, they found that, in their surgical group of 107 cases, operation and irradiation were employed in all but ten

cases. Of the fifty-four nonsurgical cases, 61 per cent received treatment by both radium and roentgen rays; 28 per cent received treatment by radium only, and 11 per cent by roentgen rays only. In thirty-one of the fifty-four cases, biopsy was made. From these observations the authors conclude that irradiation only is a poor policy unless the growth is so extensive as to be totally inoperable; then, with irradiation only, palliation usually can be secured, and even cure in the occasional case (10 per cent of their medical series). Surgery only is not justifiable, even if the carcinoma is entirely removed. The facts that most carcinomas of the thyroid are low grade malignant tumors and that, in an appreciable proportion of cases in which operation cannot be performed, irradiation is followed by cure are evidence that these growths are sufficiently radiosensitive fully to warrant postoperative treatment. Because of the frequency with which carcinoma of the thyroid develops in a preexisting nodular goiter and the difficulty of distinguishing carcinomas in their early stages from benign tumors, surgical removal of all nodular goiters should be considered the treatment of choice, together with postoperative irradiation whenever carcinoma is found.

Southern Medical Journal, Birmingham, Ala.

26: 211-304 (March) 1933

Roentgenologic Examination of Injuries of Wrist Joint. V. W. Archer and B. W. Rawles, Jr., University, Va.—p. 211.

Value of Serial Roentgenography in Pulmonary Tuberculosis. P. F. Titterington, St. Louis.—p. 215.

Etiology of Heart Disease. J. E. Gammon, Jacksonville, Fla.—p. 219.

Cysts of the Kidney. A. I. Dodson, Richmond, Va.—p. 223.

*Circumscribed Cutaneous Myxedema Associated with Possible Endocrine Imbalance. L. W. Lord and S. Morrison, Baltimore.—p. 231.

*Spasmodic Torticollis: Notes on Its Etiology and Treatment. R. G. Spurling and F. Jelsma, Louisville, Ky.—p. 237.

Familial Disease of Central Nervous System Resembling Multiple Sclerosis: Preliminary Report. R. F. Gayle, Jr., and J. P. Williams, Richmond, Va.—p. 242.

Sympathectomy in Acute Arterial Occlusion: Experimental Study. E. P. Lehman, B. W. Rawles, Jr., and D. R. Murphy, Jr., University, Va.—p. 246.

*Obstetric Analgesia: Analysis of Three Hundred Cases of Oral Administration of Sodium Amytal. F. O. Plunkett, Lynchburg, Va.—p. 250.

Fractures and Dislocations of the Elbow. R. T. Hudson, Louisville, Ky.—p. 253.

Fractures and Splints Above the Belt. R. A. Woolsey, St. Louis.—p. 256.

New Type of Sacro-Iliac Brace. F. W. Carruthers, Little Rock, Ark.—p. 258.

Aseptic Anastomosis of the Colon. G. T. Tyler, Jr., Greenville, S. C.—p. 259.

Duodenum: Diagnostic Problem. A. W. White, Oklahoma City.—p. 263.

Osteogenic Sarcoma. H. Jeter, Oklahoma City.—p. 268.

The Ascaris Problem in the United States. W. W. Cort and G. F. Otto, Baltimore.—p. 273.

Protection of Southern Ports Against Importation of Tropical Diseases. C. V. Akin, Mobile, Ala.—p. 278.

Pathology of Eye: Preparing an Eye for Microscopic Examination. F. H. Rosebrough, San Antonio, Texas.—p. 282.

*Nondiphtheritic Laryngotracheobronchitis. S. Kirkpatrick and S. M. Kirkpatrick, Selma, Ala.—p. 287.

Bell's Palsy and Its Treatment. Beverly R. Tucker, Richmond, Va.—p. 291.

The Premature Infant as a Patient. T. C. Smith, H. S. Andrews and Margaret Limper, Louisville, Ky.—p. 293.

Vitamin G (B₂) Assay of Two Commercial Meat Extracts. A. Chanutin and E. E. Barksdale, University, Va.—p. 296.

Circumscribed Cutaneous Myxedema.—Lord and Morrison present a case of circumscribed myxedema of the extremities in association with recurrence of clinical symptoms of hyperthyroidism in a patient who was previously thyroidectomized. The authors raise the question as to whether the thyroid alone is at fault in this association or whether the disease is one of "endocrine system" disturbance. While definite conclusions cannot be derived from one case, they advance suggestions and theories as to the strange mechanism that would produce areas of myxedema in a patient suffering from apparent hyperthyroidism.

Spasmodic Torticollis.—Spurling and Jelsma state that in true spasmodic torticollis there are few resemblances to the other varieties of torticollis, either in symptomatology or in pathologic anatomy. Knowledge as to the etiology of spasmodic torticollis is hopelessly inadequate. The theory which has received the most widespread support is that the disease is psychogenic in origin. Following this line of reasoning, many patients have been treated by psychoanalytic methods.

A few favorable results have been reported. There is a pronounced neurotic or psychopathic element in a great majority of these patients. The infection theory of spasmodic torticollis has also received wide support. The authors discuss the various operative procedures employed for the relief of spasmodic torticollis. They recommend the intradural section of the first three anterior and posterior cervical nerve roots and the spinal portion of the accessory nerve bilaterally.

Obstetric Analgesia.—During the past eighteen months, Plunkett used sodium amytal in 300 obstetric cases. From this experience he concludes that sodium amytal is not without danger to mother or child but, scientifically administered, is the least dangerous of the drugs at one's command today for obstetric analgesia. Ephedrine and caffeine sodiobenzoate should always be immediately available when sodium amytal is given. Oxygen should be given to the mother when the baby is about to be delivered and its administration continued until the pulsation in the cord ceases. When massive doses are given, the patient should not be left alone for an instant until she reacts from the drug. Complete analgesia and amnesia are obtainable in the great majority of cases. The drug can be given at any time during labor, but it is preferably given in the beginning. The patient's weight, blood pressure, muscular tone and the character of the uterine contractions should be one's guide as to the amount of the initial dose. The degree of restlessness and discomfort should be the guide as to repetition. Labor, as a whole, is not prolonged but is really shortened by the barbiturates. However, in many cases the second stage is prolonged unless episiotomies and prophylactic forceps are employed.

Nondiphtheritic Laryngotracheobronchitis.—The Kirkpatrick point out that the predominating organisms found in nondiphtheritic laryngotracheobronchitis are the staphylococcus and streptococcus. Low tracheotomy with mechanical removal of mucus is essential in severe cases. Prophylactic treatment in laryngitis always includes general measures to protect the child from any irritating external cause, such as cold winds or dust-laden air. Enlarged tonsils and adenoids should be removed. The resistance of the child should be built up by careful feeding, administration of cod liver oil and sun baths. All children should be given toxin-antitoxin mixture for immunization against diphtheria. Medical measures vary as the symptoms arise. The fluid level of the body should be maintained at all times. The administration of large doses of sodium bicarbonate at frequent intervals has given good results in some cases. Small doses of syrup of ipecac at frequent intervals help the milder cases. Apomorphine, atropine, epinephrine and inhalations are all of value in many instances. If the diagnosis is doubtful, diphtheria antitoxin should be given. Low tracheotomy is the operation of choice. Although some prefer intubation, the authors believe that the open tracheotomy tube gives much better access to the trachea for the removal of the thick, sticky mucus encountered in these cases.

Texas State Journal of Medicine, Fort Worth

2S: 733-802 (March) 1933

*Surgical Treatment of Cervical Ribs. A. W. Adson, Rochester, Minn.—p. 739.

Malignant Tumors of Testis. C. M. Simpson, Temple.—p. 747.

Pitfalls in Management of Appendicitis. J. H. McCracken, Jr., Dallas.—p. 752.

*Treatment of Uterine Bleeding in Young Women. W. A. Chernosky, Temple.—p. 754.

Further Observations on Reduction of Postoperative Mortality in Gynecic Laparotomies. W. R. Cooke, Galveston.—p. 758.

The Radiologist as Key Man in Cancer Work. A. Soiland, Los Angeles.—p. 762.

*Prevention of Cardiovascular Syphilis. M. J. Exner, New York.—p. 764.

Practical Points in Refraction. E. L. Goar, Houston.—p. 769.

Hereditary Ophthalmologic Defects. R. H. Needham and A. E. Jackson, Fort Worth.—p. 773.

Pollen Counts in Fort Worth, Texas, for the Years 1929, 1930 and 1931. S. Hulsey, Fort Worth.—p. 779.

Spontaneous Pneumothorax Due to Bronchial Asthma: Case Report. I. S. Kahn, San Antonio.—p. 781.

Treatment of Cervical Ribs.—Adson states that patients who are found to have cervical ribs and do not have symptoms should not be informed of their condition, as such knowledge may predispose to the development of vague pains about the

neck and shoulder. Patients with mild symptoms do not require surgical intervention unless the blood pressure and radial pulse can be reduced or obliterated by elevation of the chin and rotation of the head to the affected side on inspiration. The anterior approach and tenotomy of the tendinous insertion of the scalenus anticus muscle is the operation of choice, since it is easier to perform, avoids injury to the brachial plexus, and is more effective in relieving compression and irritation of the subclavian artery and brachial plexus than is the trans-cervical or posterior removal of the cervical rib.

Treatment of Uterine Bleeding.—Chernosky says that, in all cases of uterine bleeding, the diagnosis of the exact pathologic condition is of vital importance, because each condition calls for a particular method of treatment. Surgery is indicated in the relief of definite surgical pathologic conditions, such as fibroids, myomas and malignant disorders of the fundus uteri, erosions and lacerations of the cervix, malpositions and malformations of the uterus, ovarian tumors, and allied demonstrable pathologic conditions of the ovary that may be definitely convicted of being causative factors in uterine bleeding. Medication with styptics, tampons, packing and curettage have been of some value in certain cases, but in reality these are only palliative measures and have been of little if any value in idiopathic bleeding. Radium and roentgen irradiation have a decided value in uterine bleeding. The intra-uterine application of radium and, in some cases, the external application of the roentgen rays are of decided value in bleeding from fibroids. No tumor that has attained a size greater than a three and one-half months pregnancy, nor a degenerating or pedunculated fibroid should be treated by these methods. Radium may be used in some cases of cervical and uterine polyp, the endometrial and myometrial lesions, and in some cases of ovarian dysfunction if bleeding is present. Radium and roentgen irradiation, when feasible, should be the treatment in all cases classed as poor operative risks, but pelvic inflammation or infection absolutely contraindicates it. In the treatment of idiopathic bleeding, intra-uterine applications of radium have served best. The dosage is from 25 to 50 mg. of radium placed in the uterus and left in situ for from three to six hours. The treatment may be guardedly repeated if the previous treatment or treatments have not given the desired results. Good results have also been noted after roentgen radiation of the ovarian regions.

Cardiovascular Syphilis.—Exner believes that the problem of prevention of the serious results of cardiovascular syphilis resolves itself into the early diagnosis and early treatment of syphilitic infection, and the diagnosis and adequate treatment of cardiovascular involvement in its early stages, before the heart and vessels have become seriously impaired. In regard to early diagnosis, the following points deserve emphasis: 1. Unremitting alertness against the possibility of syphilis entering into the pathologic picture will serve to clear many obscure cases and prevent serious damage or disaster. 2. All patients presenting signs of cardiovascular syphilis should be considered as having the disease until the contrary is proved. 3. Careful recording of case histories is essential, as they will often furnish the clue to an early diagnosis. 4. Careful and reasonably frequent periodic reexamination should be done of all syphilitic patients, with especial attention to the cardiovascular system. In patients with late syphilis the examination should include the routine use of the fluoroscope and the teleroentgenograph. 5. Repeated Wassermann tests should be made in all doubtful cases. 6. The therapeutic test should be used in young persons. The accepted scheme of treatment of early syphilis now commonly followed embodies the following essentials: (1) early diagnosis and immediate treatment; (2) complete physical and neurologic examination, accurately recorded, before treatment begins; (3) continuous treatment with courses of an arsphenamine, with interim courses of heavy metal and potassium iodide; (4) a Wassermann test at the beginning of each course of arsphenamine or of heavy metals, and a spinal fluid test after the second course of arsphenamine; (5) a Wassermann test every one or two months for one year after the completion of treatment, and, at the end of the year, a complete physical and neurologic examination, spinal puncture, and, if possible, fluoroscopic examination of the cardiovascular area, and (6) thereafter a yearly physical examination and a Wassermann test every six to twelve months.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

17: 193-256 (April) 1933

- Concerning Unusual Ulcers of Cornea and Their Treatment. A. Fuchs.—p. 193.
Effect of Diet on Nature of Ocular Lesions Produced by Naphthalene. Margherita Cotonio Bourne.—p. 210.
Role of Calcium in Naphthalene Cataract. Margherita Cotonio Bourne and Dorothy Adams Campbell.—p. 220.
Retrobulbar Injections and Seventh Nerve Block. K. K. Nayar and G. J. N. Nayudu.—p. 233.
Parathyroid Cataract. P. Weinstein.—p. 236.

British Journal of Radiology, London

6: 193-256 (April) 1933

- An International Comparison of the Roentgen: The Unit of Quantity of X-Rays. G. W. C. Kaye and W. Binks.—p. 195.
*Value of Serum Reactions in Radiotherapy of Cancer. E. C. Lowe.—p. 207.
Classification of Tumors in Relation to Radiosensitivity. R. Paterson.—p. 218.
Pharyngeal Diverticulum Containing Neoplasm in Its Walls: Report of Case. J. V. Sparks.—p. 233.
Note on Hydatid Disease in the Chest. J. F. Bromley.—p. 237.
Hypodermolithiasis: Case. E. W. Twining and W. Addey.—p. 240.
Importance of Small Dosage in Roentgen-Ray Treatment of Leukemia. G. H. Orton.—p. 242.

Serum Reactions in Cancer.—The follow-up observations of Lowe in more than 100 cases of cancer show that his quantitative modification of the Bendien reaction will give evidence of progress after treatment, which cannot be so early obtained in any other way. It is possible to: 1. Observe the serum of a patient, suffering from a malignant condition and successfully treated surgically, gradually become and remain normal. 2. Observe, by the absence of the subsequent development of a normal or nonmalignant reaction after treatment, that the malignant condition in that case has not been eradicated and the recurrence or metastasis will probably follow such observations sooner or later. 3. Detect, by a change in the subsequent serum reactions from a normal or nonmalignant to one of malignant type, that recurrence is impending or metastasis developing: this has been shown in some cases months before clinical evidence confirmed it. 4. Demonstrate a satisfactory response to roentgen, radium or other forms of treatment by the gradual development of less positive and, finally, completely normal reactions in certain cases. 5. Foretell by the definite development of a more and more positive malignant reaction in the blood the fatal result that is impending in spite of the absence of immediate clinical manifestations in some cases. 6. Recognize by the finding of a markedly positive and malignant reaction of the first and second tube type that the prognosis is hopeless and that palliative treatment is all that can be expected from a therapeutic point of view.

British Medical Journal, London

1: 549-596 (April 1) 1933

- Headache and Pain in Inflammation of Nasal Sinuses. H. Tilley.—p. 549.
Id. W. Harris.—p. 551.
Spontaneous Subarachnoid Hemorrhage of Intraspinal Origin. II. Douglas-Wilson, S. Miller and G. W. Watson.—p. 554.
*Spontaneous Subarachnoid Hemorrhage: Report of Eight Cases. H. Cookson.—p. 555.
Rubin Test as a Therapeutic Agent. J. R. Goodall.—p. 558.
Properties of Halibut Liver Oil. R. T. M. Haines and J. C. Drummond.—p. 559.
Efferent Fibers in Ilio-Inguinal Nerve and Their Relation to Incision for Appendectomy. H. J. Wade.—p. 561.

Spontaneous Subarachnoid Hemorrhage.—Cookson reports eight cases of spontaneous subarachnoid hemorrhage. Two instances of a mild grade of the disease are recorded in which there was a slow oozing of blood leading to headache, pyrexia and symptoms of meningeal irritation. A good recovery followed. Examination of the cerebrospinal fluid is the key to the diagnosis, and the fluid is nearly always uniformly tinted, owing to the presence of blood. It may, however, be clear to the naked eye, yet red corpuscles can be discovered with the microscope. The author observed this in one of his cases in which the diagnosis was proved at necropsy. Intra-ocular changes are valuable in diagnosis and were observed in half

the cases. Clotting of the blood, so that it is prevented from entering the optic sheath, is one cause for their nonappearance. Periodic headaches are often complained of for years, either before or after the rupture of a cerebral aneurysm, or both. This was the case in five of the author's eight cases, one having the characters of migraine. Treatment consists in absolute rest and in the reduction of the intracranial pressure when the life of a patient is threatened and when the symptoms of meningeal irritation are severe and persistent.

1: 597-640 (April 8) 1933

- *Dry Bronchiectasis: Observations. C. Wall and J. C. Hoyle.—p. 597.
*Endometriomas: Five Clinical Types. V. B. Green-Armytage, in collaboration with S. K. Datta.—p. 602.
Closed Renal Tuberculosis, with Especial Reference to the Possibility of Healing in This Disease. A. L. d'Abreu.—p. 605.
New Growths of Kidney: Analysis of Sixty-Five Cases. R. H. J. Swan.—p. 606.
Muscle Extract Treatment of Intermittent Claudication. M. Newman.—p. 611.

Dry Bronchiectasis.—Wall and Hoyle present twenty cases of dry bronchiectasis and express the opinion that the condition is comparatively common. Bronchopneumonia, usually following measles, whooping cough or influenza, during childhood or adolescence, is the commonest antecedent condition. A dry cough is the commonest symptom. Hemoptysis is not as frequent as the cases previously recorded would suggest. The condition is usually basal, and abnormal physical signs, dullness, weak breath sounds and crepitations often serve to indicate the affected area, though they may be entirely absent. Frank signs of cavitation are exceptional. Roentgenography after the administration of iodized poppy-seed oil is the only certain means of diagnosis. The explanation of dry bronchiectasis seems to be that, if for any reason air does not enter the alveoli during inspiration, the force of the inspiratory effort is transmitted to the bronchi to which the air has access. Treatment is governed by two main factors, the risk of sepsis and of hemoptysis. The authors suggest that lobectomy should be considered in each case.

Endometriomas.—The private and hospital records of Green-Armytage show that a state of endometriosis existed in 8.9 per cent of his last 1,000 consecutive abdominal operative cases. These patients had been treated for chronic tubo-ovarian disease, slowly growing innocuous tumors of the uterus, intractable dysmenorrhea, dyspareunia, lumbago, appendicular colic, hemorrhoids, or Bacillus coli infections. The author's cases of endometrioma indicate that there are five clinical types: uterine tumor, obstruction or invasion, tubo-ovarian mass, the symptomatic type in which only symptoms predominate, and the postoperative scar type, which is rare. The author states that surgical measures should be as conservative as possible, provided the whole area of endometrial cells and their cystic formation are removed. For instance, in an endometrial tumor of the uterus it may be possible to do a myomectomy or an amputation just below the level of the tubes, the two fallopian tubes being removed at the same time. When there are large cysts, general involvement of the pelvis or rectovaginal adenomyomas, the author does not hesitate to remove the tubes, ovaries and uterus. He believes that it is never necessary to excise a rectovaginal growth or that it is wise to attempt a total hysterectomy in such a case. In two patients in whom there was partial obstruction of the intestine due to secondary endometriomas, he performed a double salpingo-oophorectomy and partial hysterectomy. The two patients have had no recurrence of symptoms in eighteen months.

East African Medical Journal, Nairobi

9: 339-368 (March) 1933

- Medical Department and Health Organization in Kenya, 1909-1933. J. L. Gills.—p. 340.
Scheme for Reducing Incidence of Tuberculosis in Uganda. R. Y. Stones.—p. 355.
Acute Intestinal Obstruction Due to Ascaris: Case. T. F. Anderson.—p. 367.

Edinburgh Medical Journal

40: 197-256 (April) 1933

- Fat Soluble Vitamins: Their Significance in Nutrition. E. Mellanby.—p. 197.
Mind and Medicine. D. K. Henderson.—p. 223.
Sir John Elliot, Bart., M.D., of Peebles, and Some of His Friends. R. W. I. Smith.—p. 237.

Journal of Physiology, London

78: 1-112 (April 13) 1933

- Nerve Endings in Mammalian Muscle. B. H. C. Matthews.—p. 1.
 Studies on Histamine Hypotension. F. Domenech-Alsina.—p. 54.
 *Influence of Foodstuffs on Rate of Urinary Acid Excretion. C. E. Brunton.—p. 65.
 Effect of Hysterectomy on Estrous Cycle of Ferret. Ruth Deanesly and A. S. Parkes.—p. 80.
 Action of Strychnine on Hering-Breuer Reflexes. R. S. Creed and D. H. Hertz.—p. 85.
 Ergotamine and Effect of Adrenalin on Blood Lactate. M. W. Goldblatt.—p. 96.
 Effect of Activity on Form of Muscle Twitch. J. L. Parkinson.—p. 106.

Urinary Acid Excretion.—Brunton, in his experiments on the influence of foodstuffs on the rate of urinary acid excretion of four healthy male subjects, adopted the principle recognized by Dodds that the amount of urine passed in unit time should be combined with the titration equivalent of unit volume of the urine, and that the amount of titratable acid in the urine excreted in unit time so obtained is more significant than the amount in unit volume of urine. The subjects took a standard breakfast at 8 a. m. and the chosen substance at noon or later, at which time Dodd's subjects had an "acid tide" in their urine. Duplicate 5 cc. portions of urine were titrated with tenth normal sodium hydroxide, neutral potassium oxalate being used as recommended by Folin. The accuracy of the titrations was ordinarily 0.25 per cent but occasionally only 1 per cent. In many experiments the "ammonia" was estimated by the formaldehyde titration method applied to the sample originally titrated to the end-point of phenolphthalein. The titrations to pH 7.4 were done with a quinhydrone electrode in a water bath kept within a degree of 25 C. by a gas thermoregulator. The author observed that water diuresis may cause a diminution of the titratable acid in unit volume of urine, but it does not, in normal subjects, produce a decrease in the output of acid per minute. In fact, the product of urinary volume and titratable acidity is remarkably constant contrasted with the wide variation in the single factors. He reports the output of acid per minute following the ingestion of certain single foodstuffs and a few of their combinations. If mixed meals are used to study the effect of gastric secretion on the urinary acid, the exact composition of the meal should be ascertained. Secretion of gastric juice may occur without a decrease in the output of acid per minute in the urine. Conversely, a decrease in the urinary acid output per minute occurs on waking without sufficient secretion of acid in the stomach to explain it.

Journal of State Medicine, London

41: 125-186 (March) 1933

- Survey of Diphtheria in England and Wales. J. G. Forbes.—p. 131.
 Diet: Old and New. D. C. Watson.—p. 151.
 Prevention of Crippling in Childhood and Youth. M. F. Forrester-Brown.—p. 155.
 Statistical Evidence Pointing to Possible Ultimate Eradication of Tuberculosis. J. Crockett.—p. 164.
 Recent Advances in Knowledge of Vitamin A. N. S. Capper.—p. 175.

Lancet, London

1: 621-676 (March 25) 1933

- Pneumococcal Infections. R. Cruickshank.—p. 621.
 *Relationship of Albuminuria of Pregnancy to Chronic Nephritis. G. W. Theobald.—p. 626.
 Grass Pollen Antigen for Hay Fever Desensitization. J. Freeman.—p. 630.
 *Nutrition of Heart in Relation to Electrocardiogram and Anginal Pain. K. S. Smith.—p. 632.

Relation of Pregnancy to Nephritis.—On the basis of a statistical investigation covering a period from 1911 to 1931, Theobald states that pregnancy and childbirth have but relatively little causal association with chronic nephritis. All that can be said is that there seems to be a slightly higher mortality rate from chronic nephritis in married than in single women between the ages of 20 and 55. If, however, in any year no more than thirty additional deaths had occurred in single or seventy fewer deaths in married women and had been suitably distributed between the age groups from 20 to 55, the mortality rates for the two classes of women would have been the same. The differences in the mortality rates for chronic nephritis between married and single women during the childbearing period and for fifteen years afterward are so small as to be without marked statistical significance. It is true that mortality rates are used as a measure of the incidence of nephritis,

but if "puerperal nephritis" is merely a disability that does not end in death from renal or associated causes, it differs from any other form of nephritis and should be called by a different name. So far as nephritis is concerned, it causes a considerably higher mortality rate in single than in married women after the age of 55. The marked association of the mortality from this disease with advanced age supports the hypothesis that the associated kidney lesions are more often degenerative than inflammatory. It is necessary to refute the increasingly expansive and almost competitive estimates of the frequency with which chronic nephritis is caused by the so-called toxemias of pregnancy, both because such views will cause unnecessary anxiety and will inevitably lead to an increase in the number of abortions, and because they will tend to obscure the etiology both of the toxemias of pregnancy and of chronic nephritis.

Nutrition of Heart.—Smith states that the electrocardiographic abnormalities occurring in coronary lesions offer a sharp contrast to those appearing in nutritional or toxic disturbances of the myocardium. Coronary lesions cause changes principally in the ST or RT intervals and the T waves, opposite effects being produced in leads I and III. Such changes may be regarded as "localizing" and relating to focal myocardial changes. On the other hand, the changes in diabetes, myxedema, malnutrition in children, acute anoxemia, starvation in dogs, hypoglycemia, and other general parenchymatous defects in the heart are always in the direction of flattening or inversion of the T wave or depression of the RT interval, whether one or all leads are affected. These changes represent diffuse parenchymatous myocardial damage. That they are referable to defective glycogen metabolism and diminished production of lactic acid in the heart is the explanation which at the present time appears best to explain the known facts. An electrocardiographic study of severe anemia shows that in general myocardial anoxemia, although pathologic changes are often present, no corresponding abnormalities in the electrocardiogram can be demonstrated. From these facts it appears that a liability to anginal pain may be present when there is enhanced glycogen utilization in the heart, but only if the arterial irrigation of the heart falls short, or if insufficient oxygen is present to cause combustion of the lactic acid and other metabolites that are present, for example, in the anginal pain arising during effort, when local coronary sclerosis or spasm exists. The precipitation of anginal pain by the administration of epinephrine or thyroid, or in the course of thyrotoxicosis, depends essentially on the augmentation of the rate and force of the heart, lactic acid being rapidly formed, while the coexistence of coronary sclerosis with inadequate irrigation allows it to accumulate. Again, in severe anemia, enhanced glycogen utilization in the heart is accompanied by general anoxemia, the latter being responsible for slow destruction of lactic acid, while the coronary arteries, and therefore the factor of irrigation, may be normal. The author does not suggest that lactic acid is the pain producing substance, but it seems likely that accumulation of the former is proportional to the concentration of the latter. Liability to anginal pain also attends certain conditions in which there is perversion of metabolism in the heart as part of a general metabolic dyscrasia. Here the precipitation of pain is the direct consequence of defective glycogen metabolism. There appears to be no doubt that pure metabolic derangements of this type may induce anginal pain.

1: 677-732 (April 1) 1933

- *Diarrhea and Vomiting in Infants: Some Practical Considerations. J. B. Young.—p. 677.
 Pneumococcal Infections. R. Cruickshank.—p. 680.
 *Paroxysmal Auricular Flutter: Three Cases. G. Bourne.—p. 686.
 Postoperative Venous Thrombosis and Platelet Count. R. C. Brock.—p. 688.
 Reactions of Human Skin to Foreign Serums. D. Harley.—p. 690.

Diarrhea and Vomiting in Infants.—As a result of a large experience in the treatment of infantile diarrheas, Young places great reliance on gastric lavage, intraperitoneal saline solutions and the administration of large doses of kaolin delivered directly into the stomach through the esophageal tube and funnel. Splinting the infant's arms to avoid the possibility of auto-infection is considered to be an important point in treatment. In view of the frequency of parenteral infections, the prognosis of infantile diarrhea and vomiting still remains guarded. The outlined treatment has given him good results. In assessing the

prognosis of uncomplicated cases of diarrhea and vomiting, the following factors should be considered: the younger the infant, the more serious the prognosis; when there has been a recent infection, especially measles or whooping cough, the outlook is grave, and the worse the degree of dehydration before treatment is commenced, the more serious is the prognosis. If treatment is started early the prognosis is generally favorable.

Paroxysmal Auricular Flutter.—Bourne presents three cases of true paroxysmal auricular flutter. The first patient had a ventricular rate of 260 throughout the attack, with a 1:1 auriculoventricular ratio, a mechanism found in only four other such cases reported in the literature. The patient died suddenly. The other two patients reacted to digitalis in an unusual and identical manner. The pulse chart of one was characteristic of a complete attack of auricular flutter. The necropsy in the patient who died revealed as the cause of death a mechanism that may be fatal in all conditions in which attacks of prolonged and rapid tachycardia occur. The chief observations were the scars of old infarcts in the kidney, the presence of an antemortem clot in the left auricular appendix, the absence of any other source of embolism, and the finding of a small piece of lightly adherent clot in the lumen of the left coronary artery. The digitalis effect in the two surviving patients was contrary to that usually observed in permanent flutter. In each case massive digitalization resulted at first in the usual increase in the degree of block, but before the drug was withheld, and at a daily dosage, in both cases, of 80 minims (5 cc.) of the tincture, a reversion to the normal rhythm occurred. Clinical examination a day before the rhythm became normal suggested the presence of auricular fibrillation rather than of flutter with a varying block, for exercise increased the irregularity of the heart rather than the reverse. In one of the patients there was an abrupt rise of rate at the beginning and at the definite termination of the attack. In addition, after digitalization there were violent fluctuations in rate, the degree and suddenness of which were due to the great variations in the degree of block, and which were increased as the effect of the drug became more pronounced. It was noticeable that the ventricular rate would be low at this stage when the patient was sleeping or quiet but that if the patient was examined by a physician or visited by a number of students the block would be temporarily lifted to a marked degree. These temporary increases in rate were presumably due to an accelerator or supranal cause.

Medical Journal of Australia, Sydney

1: 391-420 (April 1) 1933

Dysentery: Practical Survey of One Thousand Cases in a General Hospital in Egypt, 1918-1919. S. Rosebery.—p. 391.
Silicosis. H. E. McMahon.—p. 402.

Practitioner, London

130: 409-520 (April) 1933

Anesthetists and Anesthesia: General Review. C. Hughes.—p. 409.
Anesthetics in General Practice, with Especial Reference to Local Analgesia. C. W. Morris.—p. 418.
Progress of Anesthesia. I. W. Magill.—p. 428.
Some Practical Points Applicable to Anesthesia in Children. H. Sington.—p. 441.
Some Recent Developments in Anesthesia. F. B. Parsons.—p. 451.
Use of Extract of Suprarenal Cortex in One Type of Neurasthenia. O. Leyton.—p. 466.
Cancer: Review of Modern Treatment. P. P. Cole.—p. 473.
*Acute Poliomyelitis. D. S. Middleton.—p. 487.
Circulatory Failure in Diphtheria and Its Treatment. F. Ind.—p. 497.
Treatment of Paralysis of Bladder by Resection of Presacral Nerve. H. Bailey.—p. 505.
Note on Uses of Glucose in General Practice. F. O. Taylor.—p. 508.

Acute Poliomyelitis.—Middleton gives the six recognizable types of poliomyelitis: 1. The spinal type, which is the common variety. 2. The meningeal type, in which a marked meningeal reaction takes place in the early stages and which is therefore commonly mistaken for meningitis. 3. The progressive ascending type, accounting for many of the fatal cases, the paralysis starting in the cord and mounting until the respiratory centers are paralyzed. 4. The bulbar type, affecting the brain stem. In this case there may be paralysis of the cranial nerves. 5. Poliencephalitis, giving rise to spastic forms of paralysis when the motor centers are affected, and being followed frequently by mental changes. 6. The ataxic type, which is an attack of poliomyelitis followed by ataxia of the type encoun-

tered in neurosyphilis, apparently as a result of destruction of the cells of the sensory root ganglions. The diagnosis of the common spinal type does not present many difficulties when paralysis has appeared. Diagnosis in the absence of paralysis is only a working possibility in the presence of a large number of cases. A vague febrile illness, especially if accompanied by a slight nasal catarrh or sore throat, followed by slight symptoms of meningism in the form of headache and a little pain in the back, will invariably be attributed to a cold, influenza or teething. In the presence of an epidemic of poliomyelitis, such a case should be accepted as one of poliomyelitis until proved otherwise. When an abortive or preparalytic case is suspected, a lumbar puncture should be carried out. The cerebrospinal fluid is usually increased in tension but clear in color. There is an increase in protein and in the lymphocytes. Occasionally a trace of blood is present. If the fluid is shaken in a test tube, the froth that forms tends to persist for more than half an hour. The fluid reduces Fehling's solution in most cases, and this fact often enables a differential diagnosis to be made from meningitis. Bacteriologic examination is negative. Apart from immune serum therapy, rest is indicated in the treatment of poliomyelitis in the stage of invasion. In the acute or paralytic stage, when paralysis has appeared, it is of vital importance that absolute rest to the paralyzed muscles be secured by skilled splinting in the ideal positions at the earliest possible moment. Serum may be used during this stage in the hope that it may limit the spread of paralysis. During the stage of recovery, the edema of the cord having subsided, the paralyzed muscles must still be kept relaxed by splinting, and the position of the limbs must be altered from time to time in order to keep the weakest muscles more relaxed than those which have partially recovered. The development of deformity from unbalanced muscle action is prevented by the same means. Reeducation of the recovering muscles by carefully graduated and assisted exercises now becomes of the greatest importance. The treatment of this stage must be continued for two years before the remaining paralysis can be said to be permanent. The first measure of treatment in a case of residual paralysis is the correction of a deformity, if present. Various operative measures may be utilized during this stage of the disease in order to stabilize flail joints, by arthrodesis of the knee or shoulder, Dunn's arthrodesis of the subtalar and tarsal joints, or astraglectomy. When the return of power is good, a weakened group of muscles may be strengthened by tendon transplantation from a stronger group. By such measures it is usually possible, in all but the most widespread cases, to enable a patient to walk.

Tubercle, London

14: 289-336 (April) 1933

Social Importance of Collapse Therapy. L. O'Shaughnessy.—p. 289.
Some Clinical Types of Tuberculosis: II. L. S. T. Burrell.—p. 296.

Journal of Oriental Medicine, South Manchuria

18: 23-30 (March) 1933

Sacrum and Retrosacral Fossa in Chinese. T. Fukuzaki.—p. 23.
Influences of Internal Secretory Glands on Zondek-Aschheim's Pregnancy Reaction: I. Influence of Function of Thyroid Gland on Pregnancy Reaction. S. Kuga.—p. 26.
Organotropism of Tubercle Bacilli: Culture of Tubercle Bacilli on Fragments of Organs. N. C. Wen.—p. 27.
Etiology of So-Called Manchurian Typhoid. C. N. Wen.—p. 28.
Relation of Intracutaneous Tuberculin Reaction and Axillary Temperature in Weak Grade School Students to Roentgenologic Picture of Chest Organs. S. Nishibori and G. Kagawa.—p. 29.
Experimental Studies on Amebic Dysentery: I. Vital Staining of Endamoeba Histolytica. E. Kitabatake.—p. 30.

Paris Médical

1: 509-520 (June 10) 1933

Method of Surgical Intervention in Perforation of Intestine in Typhoid. R. Soupault.—p. 509.
Focal Bulbar Syndromes. J.-A. Chavany.—p. 511.
*Henry's Melanoflocculation Reaction in Patients Infected with Malaria. L. Alcay, E. Cattoir and F.-G. Marill.—p. 516.
*Treatment of Gastric and Duodenal Pain by Amino Acids. J. Lenormand.—p. 518.

Melanoflocculation Reaction in Malaria.—Alcay and his associates studied Henry's melanoflocculation reaction in patients with malaria of anopheline origin and in another group with inoculation malaria. The flocculation test was performed with melanin antigen provided by Henry and according to the direc-

tions first prescribed by him. Blood for the test is taken from the fasting patient. Five test tubes are required. The first two contain two dilutions of serum with melanin suspension diluted in redistilled water. The third tube (control) contains only serum and redistilled water. The fourth tube contains serum and melanin suspension diluted in redistilled water containing 0.3 per cent sodium chloride. The fifth tube (control) contains only serum and redistilled water containing 0.3 per cent sodium chloride. The reactions are read fifteen minutes after incubation of the tubes at 37 C. for two hours and three quarters. Among the forty-eight cases of malaria of anopheline origin (confirmed by microscopic examination), forty-four positive reactions were obtained in the first test and forty-seven in the second test. This shows the frequency of positive melanoflocculation reactions in malaria and also the importance of performing two tests at an interval of a few days. In eleven cases of inoculated malaria (*Plasmodium malariae*) in which serial tests were performed, the flocculation appeared with increasing intensity as the disease evolved; under the influence of treatment it gradually diminished in intensity and finally disappeared. In three cases in which the attacks were especially severe and numerous, superflocculations were obtained. An interruption of treatment after a decrease in flocculation is followed by an increased flocculation. With energetic treatment the flocculation test becomes negative rapidly, while with insufficient treatment the flocculation decreases slowly and sometimes remains subpositive. The test appears to have a diagnostic interest, as positive reactions were obtained before the first attack in two cases, and in one of them even before demonstration of the parasite in the blood. These observations corroborate the value of Henry's reaction as a guide to treatment and possibly, together with other clinical and biologic tests, as a criterion of cure.

Treatment of Gastric and Duodenal Pain by Amino Acids.—Lenormand has experimented with the treatment of gastric and duodenal ulcer by amino acids recently suggested by Weiss and Aron. He employed daily intracutaneous injections of 0.2 cc. of a solution of 2 per cent tryptophan and 4 per cent histidine. The treatment produced a rapid sedation of gastric and duodenal pain in all cases. The therapy is symptomatic. In one case, spasms and fleeting pain appeared between injections and a severe ulcerous crisis occurred two weeks after the last injection; in another case, the roentgenologic signs of ulcer remained unchanged after twenty injections. Furthermore, the sedative action of tryptophan and histidine is also observed in gastric pain that does not originate in ulcer. The author thinks the sedative action of the combined acids may consist in causing a hypersecretion of mucus rather than a reduction of the hydrochloric acid secretion. While it is too early to explain the mechanism of this therapy, it may be accepted as a rapid and efficacious method for treating gastric pain.

Presse Médical, Paris

41: 945-968 (June 14) 1933

Roentgen Rays in Treatment of Exophthalmic Goiter. J. Belot and L. Delherm.—p. 945.

*Cardiovascular Reactions to Injection of Contrast Mediums. A. Ravina, A. Sourice, J. Lesauce and G. Godlewski.—p. 948.

*Electrocardiographic Modification During Experimental Left Cardiac Ventriculography. M. Racine and H. Reboul.—p. 950.

Cardiovascular Reactions to Injection of Contrast Mediums.—In experiments on dogs, Ravina and his associates studied the effect of the injection of various types of contrast mediums into the right auricle of the heart to discover the cause of the cardiovascular disturbances sometimes resulting from this procedure. They found that a number of contrast mediums are well tolerated, causing only slight modifications of the respiratory and circulatory rhythm. However, if salts in solution are used in excess of a certain concentration (variable with each salt), a disturbance of equilibrium is produced, resulting in precipitations. This occurs especially with sodium iodide if the concentration exceeds 70 per cent. For arteriography this substance should be replaced whenever possible by other compounds of iodine or derivatives of thorium. In some experiments, concentrated solutions of the kind necessary to make the cavities of the heart visible were used. In arteriography one may use less concentrated substances which are better tolerated. Iodine compounds, even if less toxic than sodium iodide, present a danger of pre-

cipitation if used in concentrations of over 70 per cent. Such accidents do not occur with compounds of thorium, which also have the advantage of being painless and are therefore valuable for arteriography. However, the rapid diffusion of thorium compounds into the blood may hinder the taking of certain roentgenograms. This is particularly marked in the cardiac cavities and makes it impossible to obtain good roentgenograms of them. Unstable compounds of thorium are extremely dangerous, as they may cause accidents of shock; it is therefore important to use only perfectly stable products in experiments of this kind.

Electrocardiographic Modification During Experimental Left Cardiac Ventriculography.—Racine and Reboul studied the electrocardiographic modifications during the course of left cardiac ventriculography in dogs to discover all possible dangers of this new method of cardiovascular examination before applying it to human beings. All the electrocardiograms taken during the hours or the day following the intraventricular injection were normal. The ventricular puncture did not cause any modification of the electrocardiogram or, at most, a few extrasystoles. The contrast fluids that were utilized, no matter what their concentration was, produced changes analogous to those produced by the same quantity of physiologic serum. The pressure of the injection is more important than the volume. A left intraventricular injection of 20 cc. under pressure of 1.25 Kg. does not modify the electrocardiogram, whereas an injection of 15 cc. under a pressure of 1.5 Kg. causes extrasystoles and, under a pressure of 2 Kg., paroxysmal tachycardia. Seven cubic centimeters under a pressure of 1.25 Kg. suffices for a good left ventriculogram of a dog, and 15 cc. under a pressure of 2 Kg. may cause paroxysmal tachycardia. This large margin of safety between the volume and pressure required for a ventriculogram and the figures that cause the slightest modifications of the electrocardiogram permit envisaging the application of this method to man in the future.

Clinica Ostetrica, Rome

35: 321-384 (June) 1933

*Bleeding as Means of Treatment of Some Amenorrheas. C. Merletti.—p. 321.

Rupture of Ovarian Cysts. M. Orrù.—p. 332.

Extra-Uterine Pregnancy of Three Months and Multiple Fibromas of Uterus: Case. G. Campacci.—p. 338.

Chlorionepithelioma Falsely Diagnosed as Extra-Uterine Pregnancy: Case. R. Galli and L. Toldo.—p. 345.

Value of Displacement of Cranial Bones in Roentgenologic Diagnosis of Fetal Endo-Uterine Death. A. Quagliati.—p. 354.

Haste and Incompetence in Reports of Abortions. P. Galfami.—p. 358.

Bleeding as Means of Treatment of Some Amenorrheas.—Merletti reviews the pathogenesis of amenorrhea and passes on to the treatment of emotive amenorrhea, amenorrhea due to general chilling and amenorrhea due to chloris of puberty by simple bleeding. The author states that emotive amenorrhea occurs after emotional psychic shock, especially during the menstrual flow. Menstruation depends on hypophyseal action as well as ovarian action. Since the regulatory seat of hypophyseal activity is in the floor of the third ventricle and secondarily in the ovary, the author believes that any nervous trauma such as pain and fright may inhibit the cerebral stimuli. He holds that the cerebral stimuli can be directly transmitted to the gonads and there can influence the trophism and activity of the ovary and the ovarian phenomena such as menstruation. A simple venesection rendered all the author's patients normal and stimulated the inhibited mensural flow. In amenorrhea due to general chill there is a great disturbance of all cellular exchanges, which necessarily involves all endocrine functional activities influencing menstruation. After venesection in patients with this type of amenorrhea, there is a cessation of the symptoms brought about by menstrual arrest: general malaise, cephalgia and acrocyanosis. Menstruation usually occurs after a single bleeding. Amenorrhea due to chlorosis of puberty is accompanied by cephalgia, greenish pallor, torpor, somnolence, vertigo and acrocyanosis. Patients with this amenorrhea were given a series of slight bleedings. These not only regulated menstruation but stimulated the hematopoiesis and blood crisis. According to Pende, the diminution in blood pressure due to the venesection introduces epinephrine into the circulation, thereby correcting a condition of hyposuprarenalism, a factor of chloro-

sis. He states that he does not know of any satisfactory theory to explain the beneficial action of bleeding in amenorrhea due to chlorosis.

Riforma Medica, Naples

49: 701-740 (May 13) 1933

- Particular Reaction of Patients with Leukemic Myelosis to Roentgen Therapy After Impregnation with Thorium Dioxide. G. Izar and E. Castronovo.—p. 703.
- *Treatment of Psoriasis with Extract of Patient's and Foreign Squamas. L. Ciarrocchi.—p. 708.
- Acute Febrile Form of Carcinoma of Liver. G. Molinari.—p. 716.
- Slight Purpura and Early Hemorrhagic Meningitis: Case. F. D'Ambrosio.—p. 731.

Treatment of Psoriasis.—Ciarrocchi describes the technic of Toma's treatment, which consists of reducing the squamas to an impalpable powder, dissolving it in physiologic solution of sodium chloride to which is added a 0.25 per cent solution of formaldehyde, pouring the whole in a test tube kept at 37 C. for a week and shaking it to help eliminate the formaldehyde: the concentration of the emulsion must not surpass the deposit of twenty-four hours of sedimentation; that is, the height of 1 or 2 cm. Bacteriologic control is practiced after the mixture has remained for two days in an incubator. From 2 to 3 cc. of this vaccine is injected subcutaneously at intervals of from two to four days, the dose gradually rising to 10 cc. The results of this treatment on three patients were all satisfactory. The maximum amount of time required for complete cure was two months (twenty-one injections). The author modified the method by using a 0.5 per cent solution of formaldehyde. After keeping the tubes at the required temperature of 37 C. for a week, he shook them vigorously, placed them in a water bath at 58 C. for about an hour and then packed them in ice. This was repeated on two successive days, after which the emulsion was ready for use. All six of the author's patients were able to endure the test without notable disturbances and were completely cured. The author advocates treatment with extract of squamas in patients with generalized eruptions in which the use of chrysarobin is contraindicated. For women patients with psoriasis of the scalp, this treatment is advantageous in that it does not require the cutting of the hair. The author found that several slow cases responded most rapidly when squama treatment was combined with internal administration of solution of potassium arsenite. He states that the combined method entirely prevents recurrences or makes them less severe.

Prensa Medica Argentina, Buenos Aires

20: 1119-1178 (May 24) 1933. Partial Index

- Tuberculous Etiology of Erythema Nodosum: Report of Epidemic; Cases. R. Cilibi Aguirre.—p. 1119.
- Albuminuria Following Sodium Gold Thiosulphate Therapy in Pulmonary Tuberculosis. J. Orgaz.—p. 1139.
- *Vollhard's Dilution Test of Renal Function in Obese Persons. Teresa Malamud.—p. 1142.

Renal Function in Obese Persons.—Malamud says that the results of Vollhard's dilution test of renal function in obese persons are conflicting with those given by other tests of renal functions (determination of the total urea and nonprotein nitrogen in the blood and the phenolsulphonphthalein test). While the last mentioned tests give results that indicate a normal function of the kidneys, the elimination of urine during the first four hours following the ingestion of 1,000 cc. of tea is not equal to the quantity of tea ingested. In Vollhard's test, a subject with normal kidney function will eliminate during the four hours following the ingestion of tea a quantity of urine equal to and sometimes larger than the quantity of tea ingested. The author made determinations of the function of the kidney by the tests mentioned in fifteen obese persons presenting complications. The same tests were performed in a control group of ten patients with hepatic disturbances. Malamud concludes that the function of elimination of water is disturbed in obese persons. Clinically, the intensity of the disturbance seems to be related to the chronicity and intensity of the disturbances of the general water metabolism. The age, arterial pressure, tolerance to glusides and the presence of chronic cholecystitis have not a manifest action on the function of water elimination. Obesity and the circulatory disturbances complicating it, even if in a latent condition, are the factors of primal and secondary importance, respectively, which cause the disturbances of the elimination of water.

Deutsche medizinische Wochenschrift, Leipzig

59: 835-872 (June 2) 1933

- Scientific Foundations of Pulmonary Collapse Therapy. L. Brauer.—p. 835.
- *Pneumothorax Therapy in Dry Pleurisy. E. Regenbogen.—p. 837.
- *Diagnosis of Pleural Adhesions by Means of Roentgenokymographic Method. G. von der Weth.—p. 839.
- Detection of Larvae of *Ascaris Lumbricoides* in Sputum. W. Birk.—p. 841.
- Comparative Studies on Demonstration of Tubercle Bacilli (Laryngeal Smear, Hohn's Culture and Animal Experiment). R. Brinkmann.—p. 843.
- Treatment of Tuberculosis of Mucous Membrane by Freezing. R. Nissbaum.—p. 844.
- Classification of Tuberculosis. L. Drüner.—p. 846.
- *Case of Corrigan's Pulmonary Cirrhosis with Rare Etiology. H. Bodmer and P. Kallós.—p. 847.
- Late Sequelae of Bullet Injury of Mediastinum by Compression Injury of Vagus. A. Strauch.—p. 849.
- Gas Gangrene Caused by Injection of Medicaments. H. Junghanns.—p. 850.
- Significance of Ninhydrin Reaction for Analysis of Tuberculous Sputum. E. Salomon and L. Stürmer.—p. 852.
- Demonstration of Tubercle Bacilli in Blood. H. Lotze.—p. 853.
- Simple Method to Bring About Abundant Growth of Tubercle Bacilli. W. Gerlach.—p. 853.

Pneumothorax Therapy in Dry Pleurisy.—Regenbogen directs attention to the prompt action of pneumothorax therapy of dry pleurisy. He relates the histories of six patients whom he recently treated with success. The inflation of air should produce complete separation of the layers of the pleura in order to abolish friction and pain. No other method effects such a rapid disappearance of the pains. It prevents the development of adhesions and, in some instances, it may even divide new adhesions. The introduction of comparatively small amounts of gas is generally sufficient in this form of pneumothorax therapy. The author found from 300 to 500 cc. adequate in all his patients, although others have administered from 600 to 1,000 cc. The small amount has the advantage of limiting to a minimum the irritative action of the gas. The pains generally cease after 300 cc. has been introduced, and one filling is usually sufficient. Its effects persist as a rule until the patient is completely cured. The pneumothorax can be refilled if friction recurs, but the author found it necessary in only one of his six patients. The development of an exudate is not to be feared, but whether a pneumothorax in dry pleurisy can prevent the development of an exudate is as yet undecided.

Roentgenokymographic Method in Diagnosis of Pleural Adhesions.—Von der Weth shows that total and partial pleural indurations can be diagnosed by means of the roentgenokymograph. The diagnosis can be based on the decrease in the diaphragmatic excursions toward the thoracic border, on the reduced synergy of the lung with the diaphragm compared to the normal side, and on the decrease of these intrapulmonary amplitudes of movement toward the border. In case of interlobar indurations there is an abnormal, especially a high reaching transmission of the diaphragmatic movements. The decrease in the diaphragmatic excursions as well as in the intrapulmonary amplitudes of movement toward the border are found only in these cases, if the parietal pleura is also indurated. Shrinking of the lung and pulmonary indurations may exert traction on the mediastinum. This traction assumes clinical significance if it acts on the heart, because it may cause disturbances in the cardiac rhythm.

Pulmonary Cirrhosis with Rare Etiology.—The anamnesis in the case reported by Bodmer and Kallós revealed that ten years previously (1921) a pachydermia laryngis had been diagnosed. Roentgenoscopies of the lungs during the following years revealed old foci of calcification. In 1929 there were areas of density over the lower fields, and this condition was still unchanged in 1932. Because the clinical symptoms did not correspond with the roentgenologic aspects, the diagnosis was extremely difficult. The patient's main complaint was a susceptibility to colds and a sensitivity to smoke, but he was in good general condition. Chronic miliary tuberculosis, malignant pulmonary tumor and lymphogranulomatosis could be excluded. The roentgenologic aspects seemed to justify the diagnosis of chronic pulmonary cirrhosis (Corrigan). This condition is the result of a chronic irritation. Questioning of the patient revealed a peculiar use of liquid petrolatum, which the author considers the cause of this condition. When the pachydermia laryngis was discovered, the patient was treated for a while with swabbings.

Later he began self treatment by instilling into his nose from 50 to 100 cc. of liquid petrolatum. When this reached the nasopharynx he intentionally aspirated some of it in order to "oil his vocal cords," disregarding the attack of coughing. He did this regularly every day for ten years. The author is convinced that this abuse of liquid petrolatum is the cause of the pulmonary cirrhosis. The treatment could aim only to combat or prevent sequelae, for it is impossible to remove entirely the existing changes. The author mentions another recently published case report of impairment of the lung by self medication with liquid petrolatum, in the therapeutic instillation of which he thinks these two cases indicate the need of precaution.

Klinische Wochenschrift, Berlin

12: 849-888 (June 3) 1933

- Diagnostic Roentgen Irradiation. C. Hoffmann.—p. 849.
Potassium and Sodium in Renal Regulation of Minerals in Patients with Renal Disease. H. Glatzel.—p. 853.
*Retgression of Ovarian Changes Produced by Prolan. B. Zondek.—p. 855.
Investigations on Behavior of Atoxyl Resistant Lipase After Operations on Stomach: Changes in Pancreatic Function Following Resection of Stomach. H. Dibold and M. Taubenhaus.—p. 857.
Experimental Studies on Disturbances in Peripheral Blood Perfusion and Their Relations to Peripheral Gangrene. M. Ratschow.—p. 860.
Clinical Aspects of Dynamic Mean Arterial Pressure. F. Kisch.—p. 862.
Nature of Hereditary Hemorrhagic Telangiectasis (Osler's Disease). F. Rosenthal and P. Unna.—p. 865.
Nutrition and State of Health of Unemployed. F. Luce.—p. 868.
Quantitative Determination of Acetone Bodies in Blood by Means of Step Photometer. W. Neuweiler.—p. 869.

Retgression of Ovarian Changes Produced by Prolan.—In order to determine the further development of the ovarian changes produced in young mice by the injection of prolan, Zondek replaced the ovaries following their inspection for the prolan action. In order to do this, the ovaries were taken out through an incision in the back of the animals. Only those animals in which the macroscopic inspection revealed clearly the presence of blood dots and of corpora lutea were used for the further experiment. The animals were killed from one to four weeks after the prolan action had been determined, and the inspection of the ovaries revealed a gradual retgression of the changes. After four weeks they had completely disappeared, which proves that the ovarian changes produced by the action of prolan are reversible.

Medizinische Klinik, Berlin

29: 765-796 (June 2) 1933

- Tuberculosis and Pregnancy. Schultze-Rhönhof and Hansen.—p. 765.
Surgical Treatment of Upper Lobe Cavities. R. Nissen.—p. 767.
Curability of Tuberculosis by Medicaments. R. Jaksch-Wartenhorst.—p. 769.
Treatment of Posttuberculous Hyperallergic and Hypo-Allergic Spastic Bronchitis and Vasomotor Rhinitis by Tuberculin. W. Neumann.—p. 771.
*Significance of Positive Seroreaction for Syphilis in Pulmonary Tuberculosis. L. Dünner and R. Mayer.—p. 773.
*Renal Glycosuria in Hematogenous Tuberculous Dissemination. H. Mayrhofer.—p. 774.
Pneumothorax Therapy With or Without Anesthesia. W. Zuelchaur.—p. 776.
Anatomopathologic Contributions to Postprimary Tuberculous Apical Foci of Lung During Childhood. H. E. Anders.—p. 777.
Method of Measuring Erythrocytes According To Pijper. R. Aub.—p. 779.
Experiences with New Anesthetic: Sodium Salt of a Barbituric Acid Derivative. H. Zantop.—p. 782.

Positive Reaction for Syphilis in Pulmonary Tuberculosis.—Dünner and Mayer made the Wassermann, Meinicke clarification, Kahn, and Müller conglobation tests on 1,200 patients with pulmonary tuberculosis. In forty-three of the patients with positive syphilis reactions, the anamnesis, the clinical aspects or both indicated syphilis. However, in thirty-one patients in whom several serologic tests for syphilis were positive, neither the anemnesis nor an exact physical examination gave indications for syphilis. Observations on patients in whom the tuberculous process was progressive revealed in five instances that seroreactions at first negative became positive as the disease process became more severe. The authors conclude that a non-specific syphilis reaction in patients with pulmonary tuberculosis is possible, although this has not yet been proved.

Renal Glycosuria in Hematogenous Tuberculous Dissemination.—Mayrhofer gives the histories of three patients

who, as far as the pulmonary aspects are concerned, differ greatly from one another. The first patient had a tuberculous primary infiltrate in the right upper lobe, the second exhibited slight impairments of both pleuras without severe pulmonary involvement, and the third had a severe puberty tuberculosis with cavities on both sides. But it is noteworthy that in all three a hematogenous dissemination was followed by glycosuria. As long as the blood sugar values had not been determined, febrile or toxic glycosuria were thought of, forms which occasionally are observed in acute infectious diseases, and an impairment of the pancreas by miliary tubercle formation was also considered possible. When the blood sugar values were found to be within normal limits, it was apparent that the glycosuria could be only of renal origin. The patients had all the symptoms of a renal diabetes, except that the condition did not persist, lasting only as long as the hematogenous dissemination. It is difficult to determine the nature of the renal impairment in cases of this type. Attention is called to the toxic albuminuria that develops in the course of hematogenous proliferating tuberculosis. Although some consider this type of albuminuria an orthostatic form, the author is more inclined to believe that it has the same cause as the described renal glycosuria. He thinks that the hematogenous dissemination is the most important factor in the development of these symptoms. He points out that the temporary glycosuria has no significance for the patient but that the detection of hematogenous foci in the lungs does not complete the diagnostic work, because the hematogenous dissemination influences the entire organism.

Münchener medizinische Wochenschrift, Munich

80: 835-874 (June 2) 1933

- *Recognition and Treatment of Acute Necrosis of Pancreas. N. Guleke.—p. 835.
*Early Puncture in Exudative Pleurisy. F. Lommel.—p. 839.
Endocrine Diseases in Medical Practice: Diseases of Parathyroids. W. Veil.—p. 840.
Activity of Human Cerebrum. H. Berger.—p. 844.
*Bacteriologic Examination of Rectal Mucus in Children with Gonorrheal Vulvovaginitis. A. Charlotte Ruys and P. A. Jens.—p. 846.
Serology of Tuberculosis. N. Nagell.—p. 847.
Treatment of Hemorrhoids by Thermocautery. Schüle.—p. 848.
Race Hygiene a Required Study for Medical Students. F. Lenz.—p. 849.

Recognition and Treatment of Acute Necrosis of Pancreas.—Guleke says that necrosis of the pancreas is a destruction of the pancreas by its own activated secretion, a form of self digestion. The cause is not always readily determinable, but obesity and disturbances of the biliary tract seem to be predisposing factors. The clinical aspects of acute necrosis of the pancreas are typical. Suggestive symptoms are the fulminating onset of the pains, their rapid increase in severity and their persistence, as well as the statement of patients with biliary calculi that these pains differ considerably from those produced by the calculi. The beginning, following a big meal or after excessive drinking, is noteworthy. Generally the patient is in collapse. The pulse is small and at first not accelerated; it increases more slowly than is the case in peritonitis due to perforation. In the ultra-acute forms ending fatally within a few hours, the pulse may increase rapidly. The patients are generally restless. They are pale and sometimes cyanotic over the entire body, and the bluish marmorated appearance of the abdomen is noteworthy. Vomiting occurs in many cases, the intestinal activity is impaired and the abdomen appears inflated. An important aid in the diagnosis is in the demonstration in the blood or urine of the "deranged" ferments of the pancreas. The treatment has two objects: to check the local process and to counteract the intoxication due to pancreatic ferments in the blood. A means to counteract the intoxication directly was not discovered until recently. It was determined that the protein-digesting portion of trypsin together with the disintegration products cause the intoxication and that the point of attack of the trypsin is the reticulo-endothelial system, after the latter has been impaired by the protein substances that become liberated by the disintegration of the cells of the pancreas. More important was the discovery that the fibrin, which is increased by the protein disintegration, serves as a carrier for the trypsin and enables the latter to attack also the unimpaired cells of the reticulo-endothelial system. When it was found that heparin abolishes the carrier function of fibrin, patients with acute

necrosis of the pancreas were given continuous drop infusions, to which was added, every four hours, from 0.3 to 0.4 Gm. of heparin together with 1 cc. of an isomer of ephedrine. This treatment seems to give the desired results. Whether the administration of congo red for the purpose of detoxication will accomplish more remains to be proved. These treatments, of course, do not make the operative treatment unnecessary, for the necrotic tissues and pus accumulations have to be removed.

Early Puncture in Exudative Pleurisy.—Lommel believes that exudative pleurisy is generally treated too conservatively and that the expectant attitude may permit the development of adhesions that encapsulate the exudate, of indurations and of deformities of the lung and of the thorax. He aims to show that early puncture of the serous or of the serofibrinous pleural exudate with simultaneous air filling is the best procedure in most cases. The entirely open puncture brings comparatively favorable results, but it can be employed only in unilateral processes. Moreover, since undesirable conditions may result from a strong inflation, the author thinks a measured inflation advisable; that is, a puncture not completely open. The quantity of air to be introduced should only partly be determined by the amount of fluid withdrawn and should be done more according to the rules governing pneumothorax therapy. The author refutes the objections that have been made against early puncture and inflation. He points out that the new accumulation of exudate can be counteracted by renewed withdrawal, and that the development of adhesions and of shrinking processes are the less to be feared the earlier the puncture is resorted to.

Gonococci in Rectal Mucus.—Ruys and Jens found in seventeen children with gonorrheal vulvovaginitis that the culture method corroborated the existence of a gonorrheal inflammation of the rectum in every instance. This inflammation of the rectum, although not always clinically manifest, is extremely persistent and favors reinfection of the genitalia. In new cases it is generally possible to demonstrate the presence of gonococci in the rectal mucus both in the microscopic preparation and by means of the culture method. However, in children who have been treated and in whom cure is to be ascertained, the culture method is indispensable.

Wiener klinische Wochenschrift, Vienna

46: 673-704 (June 2) 1933

- *Endocarditis Lenta. W. Falta.—p. 673.
- Thyroiditis and Strumitis: Pathology, Clinical Aspects and Influence of Late Sequelae on Function of Thyroid. F. Starlinger and W. Richter.—p. 678.
- Normal Values for Size and Weight in Children and Young Persons. W. Kornfeld.—p. 683.
- *Direct Action of Hydrosulphuric Acid on Capillaries. E. Maliwa.—p. 688.
- *Results of Tannic Acid Therapy of Burns During Childhood. M. Langer.—p. 689.
- Pseudohemangioma of Mucous Membrane of Lips. D. Eisenklam.—p. 690.
- What Are the New Opinions About Dyspnea? J. Pal.—p. 692.

Endocarditis Lenta.—Falta states that the nonseptic form of endocarditis is observed most often in connection with acute articular rheumatism. The septic type may be either acute or chronic. Schottmüller, who differentiated the chronic septic form also with regard to its etiology in that he demonstrated *Streptococcus viridans* as the causal agent, coined the term endocarditis lenta. However, the causal significance of *Streptococcus viridans* has not been generally accepted, because cases of endocarditis lenta have been reported in which other types of bacteria were found. Moreover, since acute septic endocarditis can be caused by so many different types of bacteria, the author thinks it logical that in the chronic form this may likewise be the case. It has even been questioned whether *Streptococcus viridans* is a distinct type or only a weakened form of hemolytic streptococcus. Although the author observed a case in which once a hemolytic streptococcus was found and later *Streptococcus viridans*, he does not feel justified in deducing from this that the same strain at one time hemolyzes and at another produces a green zone, but he concludes that there are hemolytic streptococci of lesser virulence which may produce the syndrome of endocarditis lenta. The lack of uniformity in the bacteriologic aspects of the various forms of endocarditis has led the pathogenic research into a different channel. It is assumed that the different disease manifesta-

tions are not due to the difference in the pathogenic organisms but rather to the difference in the reaction of the organism to the infection that is dependent on the condition of the reticulo-endothelial system. In discussing the therapy of endocarditis lenta, the author points out that the surgical treatment of the port of entry does not always bring the desired results, since the endocarditis itself is a septic focus. He considers tonsillectomy advisable only in those cases in which there exists a chronic tonsillitis and in which it is proved that the infectious process is still limited to the tonsils. Treatment with autovaccines is not especially promising. The best therapeutic results are obtained with blood transfusions.

Action of Hydrosulphuric Acid on Capillaries.—Maliwa was induced to study the action of hydrosulphuric acid because the clinical analysis of so-called sulphur baths seemed to indicate that their efficacy is primarily due to the action of hydrosulphuric acid. He found that, if a gauze compress moistened with a saturated solution of hydrosulphuric acid in water is pressed onto the skin under water, there develops within from thirty to forty seconds a slight reddishness limited to the area of contact and disappearing after a few minutes. If an intracutaneous wheal is made with epinephrine, the wheal time is reduced to approximately half under the influence of the solution of hydrosulphuric acid. In the case of intracutaneous injection of physiologic solution of sodium chloride stained with methylene blue, the elimination of the dyestuff is hastened by hydrosulphuric acid. These tests as well as perfusion experiments on the isolated circulation of the ear of the rabbit indicate that hydrosulphuric acid effects a considerable dilatation of the vessels, which even overcomes the barrier produced by epinephrine. The author concludes that the alleviation of pain and the reduction in the feeling of tension produced by the so-called sulphur baths is due to the dilating action of hydrosulphuric acid on the vessels. He admits that the action of the "sulphur" baths is complex and that other factors are involved in their therapeutic action, but he thinks that their content in hydrosulphuric acid, in spite of the fact that its quantity is small, is the most important and most effective factor. He expresses the hope that it may become possible to utilize the described action of hydrosulphuric acid in another form for the treatment of rheumatic diseases of muscles and joints.

Tannic Acid Therapy of Burns.—Langer describes the mode of action of Davidson's tannic acid treatment and its technic and he stresses the advantages of the method. In comparing the results of the tannic acid therapy of burns with the results obtained in the treatment of burns before the tannic acid therapy was introduced, he found that tannic acid treatment combined with blood transfusions and intravenous injections of sodium thiosulphate reduced the mortality from 14.9 per cent to 7.7 per cent. The number of complications that developed following the burns was not noticeably influenced by the method of treatment.

46: 705-736 (June 9) 1933

- To What Extent Does Therapeutic Malaria Involve Danger of Transmission? Wagner-Jauregg.—p. 705.
- Radium Therapy of Cancer of Skin and Lips with Especial Consideration of Permanent Results. L. Arzt and H. Fuhs.—p. 706.
- Changes of Skin and Venereal Diseases During Last Two Decades in Vienna. W. Kertl.—p. 708.
- Etiology of Stomatitis Aphthosa. L. Kumer.—p. 711.
- *Malarial Therapy of Gonorrhea. V. Mucha and O. Rieger.—p. 713.
- Significance of Sensitive Flocculation Reaction for Treatment of Scleroses and of Erosions of Suspected Syphilitic Character. R. Muller.—p. 715.
- Juvenile Nodular Lymphogranulomatosis. G. Nobl.—p. 717.
- Etiology of Black Tongue (Lingua Pilosa Nigra). M. Oppenheim.—p. 719.
- Psychogenic Dermatoses. R. Polland.—p. 722.
- *Arsphenamine Allergy. K. Schreiner.—p. 726.
- Baldness in Nurslings and Its Relation to Baldness in Adults. R. O. Stein.—p. 729.
- Treatment of Erythematodes with Acetarsone and Bismuth. R. Volk.—p. 732.

Malarial Therapy of Gonorrhea.—Mucha and Rieger report their observations on patients who received malarial therapy for a syphilitic process but who also had gonorrhea. They found sixty-nine patients whose clinical history proved suitable for their inquiry. The malarial therapy was followed by cure in 69.6 per cent of these cases. The authors do not recommend the treatment for gonorrhea, because there are less radical methods that produce just as favorable results. More

over, it was observed that, in patients in whom the malarial therapy failed to cure the gonorrhea, other methods did. They point out that, since there is a possibility that gonorrhea patients later may contract syphilis so that malarial therapy may become absolutely necessary, the earlier malarial therapy would greatly reduce the therapeutic prospects, because it is known that a second inoculation of malaria does not give nearly as favorable results as does the first treatment. The authors think that resort to malarial therapy on account of gonorrhea is justifiable only in patients with severe adnexal complications, for it has been found that serious surgical interventions may thus become unnecessary.

Arsphenamine Allergy.—Schreiner discusses the cutaneous disorders that develop in the course of arsphenamine therapy, such as the angioneurotic syndrome, the fixed arsphenamine exanthem, the generalized exanthem and the arsphenamine dermatitis. After calling attention to similarities between the cutaneous disorders resulting from arsphenamine therapy and the known allergic diseases, the author describes tests by which he attempted to prove the allergic character of the cutaneous disorders. In order to determine the presence of specific antibodies, he made cutaneous tests, and he was able to demonstrate the allergic nature of the symptoms in eighteen of twenty patients presenting various forms of the cutaneous disorders.

Zentralblatt für Gynäkologie, Leipzig

57: 1265-1328 (June 3) 1933

Coutard Irradiation of Gynecologic Carcinoma. W. Lorenz.—p. 1266.
Hormone of Anterior Lobe of Hypophysis in Parovarian Cyst. H. Kitterer.—p. 1272.

Medical History and Gynecology. I. Fischer.—p. 1274.

Tearing of Nongravid, Healthy Uterus Between Cervix and Corpus Caused by Indirect Force. W. Stemmer and B. Heyde.—p. 1276.

*Problem of Conception Following Intra-Uterine Radium Treatment of Metropathia Haemorrhagica. C. Karg.—p. 1283.

Simple Procedure to Prevent Liquor Amnii from Entering Abdominal Cavity During Cesarean Section. S. Satchlo.—p. 1287.

*Rare Anomaly in Position of Child During Pregnancy. V. Král.—p. 1289.

Conception After Intra-Uterine Radium Treatment.—Karg discusses the history of three women in whom intra-uterine radium application, resorted to because of a metropathia haemorrhagica, produced a temporary amenorrhea. After ovulation and menstruation had become reestablished, two of the women conceived; but abortion followed and one of the women died of sepsis. However, the author thinks that the sepsis was the result of an exogenous infection and he considers the complete rejection of radium treatment of benign gynecologic disorders unjustified. He does not agree with those who maintain that radium therapy does not insure permanent sterilization. Because of the dangers involved in temporary radium sterilization, particularly because of the danger of abortion or of defective offspring, he thinks that temporary sterilization should be abandoned in favor of permanent sterilization. If this can be realized, radium therapy can be employed in metropathia haemorrhagica with the same justification as surgical therapy. The advantages of radium therapy, such as immediate cessation of hemorrhages, shortened convalescence and a reduction of the symptoms of abolished function, as compared to their severity following surgical or roentgenologic sterilization, even make it the method of choice. It is essential that the main portion of the radium rays be limited to the corpus uteri and that the ovaries receive as little radiation as possible. The aim of the treatment is to check the function of the endometrium. To attain this and to inhibit the restorative power of the mucosa, the intra-uterine radium application is best done following menstruation or after a curettage, for then the deeper layers of the mucosa will be reached by the soft gamma rays, which have about the same biologic action as the hard beta rays. The irradiation should be of short duration. The fixation of the radium preparation in the uterus should be done by gauze tamponade of the cervix. Vaginal tamponade is inadvisable. The author emphasizes that, if the ovaries are protected as much as possible, radium treatment of metropathia is the method of choice not only for women over 40 years of age but also for younger women.

Anomalous Position of Child.—In a primigravida, aged 36, Král observed an unusual position of the fetus. The enlargement of the abdomen corresponded to that of the last month of

pregnancy, but it was pushed downward and forward so that its deepest point was approximately at the level of the external genitalia. The dilated lower portions of the anterior wall of the uterus had yielded to the fetal head and had sagged downward, so that the head was anterior to the pubic symphysis. The uterine dilatation and displacement were made possible by the considerable diastasis of the rectus muscles, which, at the level of the umbilicus, measured 34 cm. The fetus was in the longitudinal position and the pelvis underneath the maternal costal arch. The maternal pelvis was empty. It was decided to perform a cesarean operation immediately following the onset of the labor pains. The child died on the second day after delivery. After the uterus had been sutured, the cause of the anomalous position was searched for and two subserous myomas were found on the posterior wall; one being the size of a fist and the other larger than a hen's egg. Both myomas were necrotic. The author assumes that these two myomas made the posterior uterine wall rigid and prevented its dilatation. As a result, the anterior wall was excessively dilated and became so thin that it could not resist the pressure of the head and bulged, a process that was promoted by the great diastasis of the rectus muscles. The author designates this abnormal fetal position *positio capitis praepubica*.

Klinicheskaya Meditsina, Moscow

11: 119-224 (Nos. 3-4) 1933. Partial Index

Alimentary Infections and Intoxications. E. M. Kastanayan.—p. 123.
*New Method of Treatment of Peptic Ulcer and of Trophic-Vegetative Syndromes by Diathermy of Sympathetic and Parasympathetic Nervous Systems. P. A. Grot and B. H. Egorov.—p. 140.

Surgical Treatment of Strangulated Hemorrhoids. N. L. Blumenthal.—p. 145.
Pneumonic Peritonitis in Children. V. Z. Poplavskiy.—p. 149.

Study of Duodenal Secretion in Renal Disease. A. P. Yakovleva and L. S. Schwartz.—p. 163.

Effect of Pituitary Extracts on Gastric Secretion. G. M. Shereshevskiy.—p. 170.

Effect of Margarine on Secretory Function of Stomach. F. P. Lopachuk.—p. 182.

Tonsil Problem. V. N. Zak.—p. 188.

Treatment of Peptic Ulcer by Diathermy of Sympathetic.—Grot and Egorov report the results of diathermy treatment of the cervical portion of the vagus and the sympathetic nerves in twenty patients with peptic ulcers of the stomach and the duodenum. From five to fifteen treatments of thirty minutes duration gave excellent results. Epigastric pain, pyrosis and eructations disappeared and the acidity came down to a normal level. The symptom complex characteristic for these patients consisted of spastic pain, pylorospasm, increased acidity and increased secretion, symptoms resulting from increased irritability of the vagus nerve. They noted in several patients a peculiar syndrome suggesting partial lowering of the sympathetic tonus; namely, narrowing of the palpebral slit, ptosis of the lid, and hypotonus of the muscles of expression on one side of the face. The authors suggest that the effect of the diathermy current is conveyed along the trunk of the vagus to its ramifications in the wall of the stomach, thus lowering its irritability. At the same time the diathermy improves the tonus of the sympathetic nerve. To throw light on the nature of the effect of the diathermy, observations were undertaken on a number of other conditions, such as achylia, biliary colic, cholecystitis and angina pectoris. These will be reported at a later date.

Hospitalstidende, Copenhagen

76: 489-516 (May 4) 1933

Sedimentation Reaction: Review. M. C. Lottrup.—p. 489.
*Inheritance of Sporadic Goiter. T. Kemp.—p. 503.

Inheritance of Sporadic Goiter.—Kemp reports a family with seven or eight cases of sporadic goiter in three generations, all in women and appearing between the sixteenth and the forty-fifth year, the symptoms of exophthalmic goiter in one instance presumably having developed some years after the simple goiter. He says that of the families with sporadic goiter on a genotypical basis reported in the literature a number resemble this family and that the inheritance can be explained on the assumption that the disturbance depends on a dominant factor, present in the X chromosome, which causes not only development of goiter but also nondisjunction of the two X chromosomes in women. It can also be explained if the disorder is dependent on several genes of like action and is limited in sex to women.

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THE FIRST HALF-CENTURY OF THE SECTION ON PEDIATRICS

CHAIRMAN'S ADDRESS

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CHICAGO

The Section on Pediatrics of the American Medical Association has passed the half-century mark. It is a fitting time to pass in review its past and to take note of the growth, the changing trends, the progress and the achievements of this important section, and to recall the names of colleagues identified with its development, not a few of whom were in the truest sense makers of American pediatric history.

The Section on Pediatrics was organized as an independent section of the American Medical Association at its thirty-first annual meeting held in New York City in 1880. Abraham Jacobi, whom probably quite a few in this audience will recall and who is regarded with reverence by all of us as the father of American pediatrics, was the founder of the organization.

After an eloquent address by Dr. Jacobi on the claims of pediatric medicine, Dr. S. C. Busey of Washington, D. C., offered a resolution creating the Section on Pediatrics as the sixth section of the American Medical Association. To quote from a chairman's address of many years ago, "Dr. Busey was the accoucheur on this happy occasion and Dr. Jacobi stood Godfather for the tender infant."

When asked in his later life how the organization of the Section came about, Jacobi had this to say, "There is no history, we just did it. It was a clear case of spontaneous generation. The Section was in the air and we were present when it condensed—that is all."

At the first regular meeting in Richmond in 1881, Dr. Jacobi presided as the first chairman, and Dr. T. M. Rotch of Boston was the first secretary. Dr. Jacobi's address at that meeting was on "The Progress in Knowledge of the Acute Contagious Diseases and Infections."

Previous to 1880, the work of the Section was done in the Section on Obstetrics and Diseases of Women, and consisted in an occasional paper on some pediatric subject. It was the time when a few lectures tacked on to the chair of obstetrics sufficed to fill the pediatric curriculum requirement of the medical school of that day.

In 1883 THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION first appeared, and it is from the date of

this meeting, the thirty-fourth held in Cleveland, that we have the first printed record of the doings of the Section.

The meeting place has always coincided with the meeting of the American Medical Association and has, including this session, been held in twenty-eight different cities of the United States. It is a strange coincidence that the 1893 meeting, during the Columbian Exposition, was held in Milwaukee, and again, forty years later, at the time of the Century of Progress Exposition in Chicago, the meeting is held in the same city.

The Section meeting in Milwaukee in 1893 was an excellent one. In the chairman's address delivered at the sixteenth session of the Section, the Milwaukee meeting of 1893 is lauded as the best one ever held by the Section up to that time, and the hope was expressed that future programs and conduct of the Section might be modeled after that memorable meeting.

I had not come across this item when the present Section meeting and program were organized, but I hope that you all will share with me the comfortable feeling that this meeting in Milwaukee is again going to be a memorable one, and that we are indeed living up to the hopes and expectation of our earlier colleagues.

Of the fifty-two past chairmen of the Section, twenty-six have passed on to their reward. Among these are some of the notable names of early American pediatrics and the founders of this organization.

There is no accurate record of attendance at the earlier Section meetings except an occasional allusion in a secretary's report. At the organization of the Section, forty members were present. At a meeting in New Orleans in 1895, 175 members attended the Section. The number has always fluctuated and depended somewhat on the meeting place of the Section. In later years, the number has often reached several hundred.

The early years of the Section were marked by a struggle for existence and independent identity. Tacked on as a tail end appendage to gynecology and obstetrics by our medical forefathers, pediatrics emancipated itself from this impracticable and archaic bond and union and under the leadership of Jacobi developed into the major branch of medicine which it is today.

The chairman of the Milwaukee meeting in 1893 speaks feelingly of the tottering footsteps of the childhood period of a great organization, of the difficulties which attended the development of an imperfectly differentiated section, of the lack of cohesion and cooperation which resulted from a diffuse and unstable membership, but speaks in praise of the fighting hearts

of the men of that day and the earlier time who made the Section what it was then and what it was destined to be.

It appears from the records that at the fortieth meeting of the American Medical Association, the ninth year of the Section, a motion was brought in to discontinue the Section on Pediatrics. The impassioned address at that time of Dr. Larrabee of Louisville, Ky., the chairman, and his convincing plea saved the Section, and such a motion was never again brought up.

At the same meeting a motion was also made that the secretary preserve the records of the Section and pass them on to his successor. To make the work more efficient and to establish the Section's autonomy firmly, the chairmen at the Milwaukee meeting of 1903 suggested the following propositions:

To cultivate a more intimate social relation among the members, the custom of some of the sections to hold an annual social reunion is to be commended, and the chairman recommends such reunions to be a fixture of the Association. (Except for the San Francisco meeting in 1894, when too few members attended, a Section dinner has been an annual feature of every Section meeting.) He recommended, also, the prompt publication of full reports of the proceedings of the Section and a careful preparation of the program for each meeting, the topics to be on timely and interesting subjects and such as will elicit good discussion.

At the fiftieth meeting of the Association and the nineteenth of the Section on Pediatrics, held in Columbus, Ohio, the chairman, Dr. Tuley of Louisville, mentioned it as one of the most dignified and important sections of the Association. He recorded with satisfaction a gradual increase in the recognition of pediatrics in the medical literature, in the schools of the day and in general and special practice. He recommended a permanent secretary for the Section and that the volume of the transactions should record biographic sketches of the members of the Section who died during the year.

The length and size of the Section program were about this time beginning to be a matter of growing concern. At the meeting in Baltimore in 1895, the rule was made that the papers of the members should not be longer than twenty minutes in the reading and that the discussor be allowed not more than fifteen minutes, and that this rule be strictly enforced. This rule became important as the Section began to grow and the programs grew to inordinate length.

The programs of the Section meetings of the late nineties often reached the prodigious size of more than thirty and even forty papers. In view of the length of the papers, one wonders how the chairmen of those days managed and emerged from a meeting with friendships intact. Section meetings which were originally intended only for afternoon sessions grew out of bounds and were held all day. At the fiftieth meeting of the Association, it was voted to hold the Section meetings only in the afternoon. At the fifty-second meeting of the Association in St. Paul in 1901, it was voted to limit the papers to members of the Section only, and one member could not present a paper in more than one section.

The following year at the Columbus meeting it was voted to limit the number of papers in any one section to forty. It is evident that the urge to write and the flood of literature are not altogether new symptoms and characteristics of our day.

Drastic limitations on the speakers, more careful selection of the program and the time element alone gradually reduced the program to reasonable size and content and one that could be managed within the allotted time.

At the sixtieth annual meeting of the Association in 1909 at Atlantic City, N. J., the Section presented a resolution that:

1. Pediatrics should be represented in the curriculum by a full professorship independent of any other chair.
2. The study of pediatrics should be compulsory and be required for graduation.
3. The time allowance for the course in pediatrics should not be less than two hundred hours.

These important resolutions were adopted and now form the basis on which the pediatric departments of practically all of the leading medical schools of the country are organized.

At the sixty-first annual meeting of the Association, held in St. Louis, the Section recommended to the trustees of the American Medical Association the establishment of a pediatric journal to be known as the *American Journal of Diseases of Children*. This was the beginning of what has today become one of the leading pediatric journals of the world.

At the seventy-second annual meeting of the Association, the forty-first of the Section, held in Boston in 1921, the chairman, Dr. Neff, recommended the creation of a fund to further scientific research, aid individual effort and defray the expenses of the secretary's office, the fund to be administered by a committee and to be known as the Abraham Jacobi Fund in honor of the founder of the Section.

By 1924 the accumulations of this fund permitted the committee to set apart a certain sum to be used in defraying, in part at least, the expenses of a foreign guest who might be invited. In 1924 the Section entertained as foreign guests Dr. Heinrich Finkelstein of Berlin and Dr. Leonard Findlay of Glasgow. In 1926 two distinguished Latin-Americans were the guests—Dr. Arturo Aballi of Cuba and Dr. Leon Velasquez Blanco of Argentina. In 1929 Dr. Giuseppe Caronia of Italy and Dr. Ernst Freudenberg of Germany were the guests. In 1930 Dr. Edward Mellanby and in 1931 Dr. Leonard Parsons, both of England, were the guests of the Section. Today we are honored by the presence of a distinguished colleague from Holland.

The conduct of the meetings of the Section during its infancy was delightfully informal. It was not unusual for the chairman, the secretary or both not to show up for the meeting, or not to appear until the second day—an unthinkable situation in our present day, but apparently complacently accepted at that time. The regular printed or announced program would often not be followed because the essayist likely as not would not show up. Volunteers were then called for and seemed to be available in abundance. Sometimes a volunteer read two papers at the same meeting. Thus it is recorded of a Dr. Earle of Chicago that he read his second volunteer paper on "A Plea for Pleasant Medication and a More Thorough Study of Infantile Therapeutics." At the same meeting, a Dr. Boothby of Wisconsin was excused from reading his paper on "Croup and Diphtheria, Their Unity or Duality," as a paper by a Dr. Harris from Virginia covered the same ground and embodied the same views.

If the discussion on papers grew too long, it was often postponed until the following day, just as a court is recessed. The meetings were not altogether without

discipline, as is shown by a motion that Dr. Casebeer, evidently an essayist on the regular program, read by title a paper which he had not thoroughly prepared.

At the eighty-first annual session in 1930, the section adopted a recommendation to change its name to "Section on Pediatrics." This recommendation, in the form of a resolution, was presented to the House of Delegates in 1931 and was adopted. The By-Laws, however, were not amended until 1932, at which time the change in name became effective.

The transactions of the Section and a complete printing of all of the papers given at the Section meeting have appeared since the year 1898.

A brief review of the programs of the last five decades reflects probably better than anything else the problems and the trend of thought of the period and the real progress that was made in meeting and conquering the successive difficulties which beset the pediatric practitioner in the development of our special field in medicine. It marks, also, the great advance we have made in the conquest of the diseases of infancy and childhood and in our knowledge of preventive care and protection.

The earlier programs of the decades from 1883 to 1903 still reflect some rather primitive pediatrics. Diphtheria and all its supposed dangers and causative influence on disease have a prominent place on the early programs. The subjects most discussed were diphtheria and membranous croup. No program was without several papers on these subjects. The subject next in importance was bloody discharges from the bowel. Poliomyelitis was first mentioned in the program of 1889.

The subject of child training and physical education in children is first discussed in the programs of the early nineties. Along with this newer thought, however, a bit of older pediatric teaching creeps in. On the program for 1902 appears the title, "Should Infants be Washed Directly After Birth," and another one, rather amusing but probably a sensible observation for the time, "On the Absence of Cow's Milk from Japan: Its Beneficial Consequences." As stated before, the 1893 Milwaukee program was memorable on account of its excellence and the diversity of subjects discussed. It introduced also for the first time the idea of symposiums on a given topic. Diphtheria and pneumonia in childhood were discussed.

The decade from 1894 to 1903 marks many distinct advances. The entity of diphtheria and the distinction between true and false croup were definitely established. The value of diphtheria antitoxin was clearly recognized. This fact and the practice of intubation had tremendously reduced the mortality of this dreaded disease.

There was a good deal of interest in enteric and typhoid fever, and no program was without a paper or two on alimentary disorders.

Increasing interest is shown in the subject of tuberculosis from the late nineties on.

This period marks the introduction of the milk laboratory and with it a new era in the sanitation of milk which in turn became a large factor in the reduction of infant mortality. The year 1896 to 1897 marks the first appearance as contributors to the section programs of some notable names in American pediatrics; Dr. Holt, Dr. Kerley and Dr. Griffith. Dr. Koplik had preceded them by several years, and they were followed shortly by Hollopeter, McClanahan, John L. Morse and our own Dr. Abt.

Rickets is discussed for the first time in a Section program in 1899.

The meeting of 1901 was marked by an imposing symposium on typhoid fever. At the same meeting the use of the x-ray as a diagnostic measure is first mentioned by Dr. W. W. Keen, who reported the location of a ureteral calculus by its aid.

Artificial feeding is given much space on the programs, and the meeting in 1903 at New Orleans had as a principal part of the program a symposium on artificial feeding and its relation to the diarrheal disturbances of childhood.

Breast milk and breast milk feeding were beginning to get considerable attention.

The decade from 1904 to 1913 marks new trends, new interests and again a distinct march forward. The sanitation of milk is much discussed, and in connection with it the various forms of bacillary dysentery. There is a distinct movement to return to breast feeding and to break away as much as possible from artificial feeding.

Jacobi's famous paper on "The Gospel of Top Milk" given in the 1908 session set up an entirely new line of clinical investigation in infant feeding, and foreshadowed many of the changes that were to come in later years in this important field of pediatrics.

Studies of metabolism in myxedema were first suggested in a paper given at the 1905 meeting. Treatment with rest for patients with anorexia, the use of lactic acid bacilli and of lactic acid in certain alimentary disturbances, feeding on the basis of calorie values for food and the use of vaccine and serum therapy were subjects discussed in the programs of the early section meetings of this decade.

It again marks the first appearance of a notable group in American pediatrics—Amberg, Rulrah, Royster, Freeman, Chapin, Knox, Pisek, Graham, Hamill, A. F. Hess, Howland, Blackfan, Talbot and Sedgwick—as contributors to the Section program. In the latter part of the decade one comes across the names of Porter, DeBuys, R. M. Smith, O. M. Schloss, Cooley, Brennemann, J. Hess, Gerstenberger, and Grulee with their first offerings.

This decade is characterized by a great awakening with reference to the problem of infant mortality. In the chairman's address of the twenty-eighth session of the Section in 1908, Graham deals with this subject. He pointed out that 50 per cent of the deaths of infants were preventable and listed a number of factors which he regarded as important in lessening infant mortality, among them inspection of milk, free antitoxin, improved sanitation, good food, antenatal care, teaching of hygiene in the schools, breast feeding and pasteurization of milk during hot weather.

Jacobi had pointed out publicly the enormous mortality in the founding institutions of New York City and as a consequence was asked to resign from the hospital staff.

The subject of infant mortality, child welfare and preventive pediatrics looms large on nearly all the Section programs from 1910 on, and is discussed by a number of the chairmen in their addresses.

In this decade occurred the first extensive epidemiologic studies of acute anterior poliomyelitis.

Allergy is discussed for the first time in the program of the 1912 meeting.

There is a continued interest in the subject of tuberculosis and the possible defensive mechanism of the body against it.

The pioneer work of Cooley clarified much about hemorrhagic diseases, and the value of the roentgen ray in pediatrics was first stressed by a number of authoritative clinicians.

This decade is notable, also, for the appearance for the first time on its programs of physiologic or biochemical studies relative to pediatrics; it marks the beginning of an era of scientific investigation which has placed American pediatrics on a high plane.

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HYPERTENSION, OBESITY AND HYPERGLYCEMIA

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NEW ORLEANS

The association of hyperglycemia and hypertension has been observed repeatedly and there has been a considerable literature accumulated which has to show that these two conditions are by no means unusual in combination.¹ The common relation of obesity to hypertension has likewise been appreciated for many years, but the frequency with which hyperglycemia occurs in obesity is a more recent observation. It would seem reasonable to expect that if hypertension and hyperglycemia are frequently associated, if obesity and hypertension are likewise often linked together and if hyperglycemia is common in the obese, it is quite likely that these three disturbed physiologic states would be prone to occur together, rather than in combination of any two of them. Such has been our experience. We have observed in a group of thirty obese patients with hypertension sugar tolerance curves that approach those of the diabetic patient. This group composed most of the elderly fat women not suffering from some acute infection who were admitted to a female medical ward in the Charity Hospital over a period of nine months. It is our impression that the syndrome of hypertension, obesity and reduced sugar tolerance is, as is to be expected and anticipated, quite common.

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Neubauer,¹ twenty-three years ago, was the first to note the occurrence of high blood sugar and high blood pressure and advanced the hypothesis that it was due to overactivity of the suprarenals. O'Hare¹ studied the dextrose tolerance curves of twenty-three patients

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Mohler,² in 1925, discussed hypertension and hyperglycemia in forty-six patients who had a systolic pressure of over 150 mm. of mercury, and glycosuria. Thirty-seven of these patients were obese. These patients did not show any greater evidence of peripheral vesicular sclerosis than would be anticipated from their age. Mohler advances the idea that degenerative changes take place in the body, affecting the structures involved in carbohydrate metabolism, impairing their efficiency and resulting in hyperglycemia. Obesity favors the development of such sclerotic changes.

Mosenthal³ lists a considerable number of authors who contend that there is a common relationship between hypertension and hyperglycemia and a somewhat smaller group who do not think that there is any association between elevated arterial pressure and increased glycosuria. He compared the blood pressure readings with thirty-one dextrose tolerance tests and found that there was no rise in blood pressure with the

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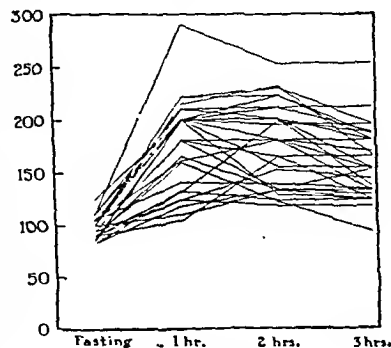


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|----------------|-------------|-----------------|-------------|--------------|------------------|--------------|
| | Obese 15 | Not Obese 72 | Total 90 | Obese 119 | Not Obese 133 | Total 254 |
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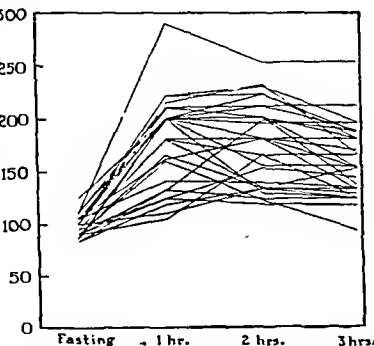
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these cases and in eleven of them the fasting blood sugar was normal. Forty-two per cent of the group showed either the blood sugar curve of mild diabetes or definite diabetes. His suggestion is that the pancreas may be responsible, as a result of dysfunction, for obesity of the endogenous type. Allison,⁷ in studying a group of twenty patients who were overweight, found that approximately half of the group had a decreased sugar tolerance. In his group were included eight persons who had a preexisting glycosuria, so that of twelve who were simply obese only three had a sugar response which indicated that they had abnormal sugar tolerance.

SUGAR TOLERANCE CURVES IN THE OBESE HYPERTENSIVE INDIVIDUAL

We have studied a group of thirty patients who ranged in age from 34 to 67. They were all women and were all decidedly overweight. The average age of the group was 52.5 and their average weight was 192 pounds (87 Kg.). The average blood pressure with a mercury manometer was 204 systolic, 118 diastolic. The systolic blood pressure ranged from a high of 254 to a low of 174. The diastolic pressure ranged from the extreme of 144 to 88. None of these patients had glycosuria before the dextrose was given. Eight of them had mild glycosuria at the end of three hours. In only one instance was there more than a very faint trace of sugar, in which case it was 1 per cent. One hundred grams of dextrose was given by mouth and the first specimen of blood was taken at the end of one hour, the second two hours later and the third three hours afterward. The sugar estimations were done according to the method of Folin-Wu. The mean curve for the group showed a fasting blood sugar of 97.7 mg. per hundred cubic centimeters; one hour later it was 176.2; two hours later, 174.6, and the third hour, 163. A variety of curves were elicited which it seems useless to reproduce individually; consequently, they are presented as a group. As a whole, the patients all maintained the typical response to dextrose exhibited by the diabetic, prediabetic or patients who have a reduced tolerance to sugar. A corresponding control group of nine obese patients without hypertension was studied.

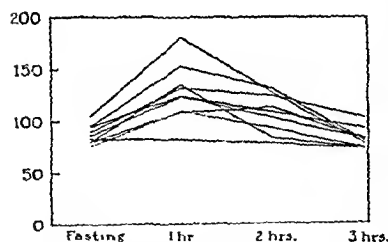


Chart 2.—Blood sugar curves of nine obese patients without hypertension.

In only one instance was there exhibited a curve comparable to that of the fat hypertensive person. In this instance, one hour response showed a rise of figures to 181, which subsided in two hours to 80. In the control group the average weight was 191 pounds (86.6 Kg.). The age averaged exactly ten years under that of the test group. The blood pressure in all these individuals was within normal range.

Further analyses of the curves were made in order to determine the effect of age on the sugar tolerance determinations. A group of eleven patients whose age was below 50, averaging 42.8 years, gave a curve that showed a fasting blood sugar of 91, rising to 162, falling to 142 at the end of the second hour and 133 at the end of the third hour. This age group compared with

the obese patients without hypertension, whose average age was 42.5. In the patients above 50, the average age was 58; the curve began at 95 mg. of sugar and registered 190 at the end of the first hour, 196 at the end of the second hour, and 171 at the end of the third hour. These two curves would seem to indicate that the hypertension might play an important rôle in the production of hyperglycemia. In other words, the age of the younger obese hypertensive individuals was almost exactly the same as those without hypertension, and yet their tolerance of sugar was markedly reduced. On the other hand,

it might just as well be argued that the diminished tolerance to sugar plays an important rôle in the production of hypertension. In the latter older group, in which it is safe to assume that arterial disease of various degrees was present, the curve certainly suggests that arteriosclerosis and degenerative changes, possibly

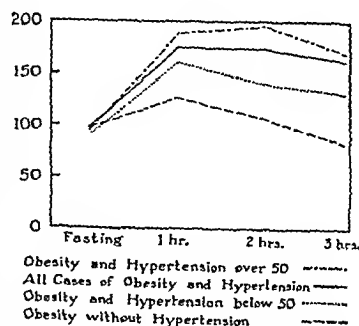


Chart 3.—Comparison of the blood sugar curves in obese hypertensive persons over and under 50 years of age and obese patients without hypertension.

in the arterial system and parenchyma of the pancreas, helped to exaggerate the lowered tolerance to sugar.

One or two interesting curves were noted. In one instance, a woman who weighed 278 pounds (126 Kg.) and was 5 feet 8 inches (172.7 cm.) in height, had a blood pressure of 230 systolic, 125 diastolic, with a fasting blood sugar of 100. At the end of the third hour the blood sugar was 20 mg. higher than at the end of the second hour; in other words, it was still ascending. Another patient had a very marked rise from a fasting blood sugar of 86 to 200, dropping in an hour to 130. The highest blood sugar at the end of two hours was 230 mg.; this occurred in a woman, aged 60, 5 feet 1 inch (155 cm.) tall, whose blood pressure was 245 systolic, 130 diastolic. The lowest figure was in a patient whose curve rose from a fasting sugar of 95 to 125, and fell to 119 in both the second and third hour observations. The blood pressure was 190 systolic, 100 diastolic. Patient 23 was a woman 5 feet 8 inches (172.7 cm.) in height, weighing 195 pounds (88.5 Kg.). She had a blood pressure of 188 systolic, 100 diastolic; the fasting blood sugar was 95, which rose to 181 and fell to 135 and then to 130. She was put on a low carbohydrate diet and with careful attention to her food intake lost 35 pounds (15.9 Kg.). Her blood pressure then was found to be 168 systolic, 100 diastolic; the fasting blood sugar was 90; it rose to 140 and fell to 125 the second hour and to 111 at the end of the third hour. The response to treatment will be reported in a later communication.

COMMENT

We have presented the average figures obtained from a group of fat women who had an elevated blood pressure and hyperglycemia. These patients were selected because they were fat and had high blood pressure, in order to study their blood sugar response to a given amount of dextrose administered by mouth. This was done to determine whether their obesity was associated with the inability properly to utilize carbohydrate and to see whether there was any definite relationship

7. Allison, R. S.: Carbohydrate Tolerance in Overweight and Obesity, *Lancet* 1: 537 (March 12) 1927.

between the hypertension and the sugar curve. It was found that all these patients exhibited a lowered tolerance to sugar, but whether or not this had any relationship to their hypertension cannot be definitely stated. It would seem that there is a definite syndrome in which obesity, hypertension and hyperglycemia are associated, probably with ultimate arteriosclerosis. However, in respect to the latter, in no one of our patients was arteriosclerosis clinically demonstrable. It is safe to assume that many of the patients did have arteriosclerosis, a statement which can be partially substantiated by the fact that the age group was ten years greater than in the control group and by the fact that it is rather difficult to conceive of pressures as high as some of the systolic and diastolic pressures in these individuals existing without a concomitant peripheral sclerosis.

In contrasting the group of younger hypertensive individuals with those of the same age period without hypertension, it is impossible to say whether the hypertension or the reduced tolerance to sugar was responsible, on the one hand, for the hyperglycemia or, on the other hand, for the hypertension.

The relation of the diminished sugar tolerance to hypertension is one about which a definite statement cannot be made either from the data that we have studied or from a review of the work of others. The correlation is so constant, however, that it would seem as if there might be some relationship to the lowered sugar tolerance other than that of the development of arteriosclerosis in a fat individual who has a hypertension. It might be possible to speculate and to advance many theories (impairment of carbohydrate storage mechanism as age advances,⁸ delay in secretion of insulin,⁹ kidney dysfunction and suprarenal action) as to why the obese hyperglycemic patient has a hypertension or why the obese hypertensive patient has a hyperglycemia, but none of these can be substantiated definitely.

In our group it is doubtful whether the factor of menopausal endocrine disturbances might possibly have some effect, as many of the patients had passed the menopause; some had not reached the menopause and only three of them could be said to be in the menopausal zone. We do not believe, therefore, that the syndrome of hypertension, obesity and hyperglycemia is a menopausal phenomenon.

The relationship of the obesity to the hyperglycemia is obvious. The obese individual is much more likely to develop diabetes than is the thin person. It naturally follows that several of the individuals of this group were obese hypertensive persons who could be classified as prediabetic.

It would seem to us that no one cause could be definitely stated as being responsible for the hypertension, the hyperglycemia, or the obesity in this group of patients who present all of these three abnormal conditions. Rather it would seem that the combination of the three conditions aggravating or intensifying one another would be the explanation for the greater pressure, the lessened response to sugar and possibly also the obesity for the group as a whole. All the factors taken together make a vicious circle which ultimately will develop in a well marked vascular sclerosis with its

attendant complications and remote effects. Fundamentally it would seem that the obesity was the most important physiologic-pathologic disturbance; the obesity is directly related to the hyperglycemia, evidenced by a diminished ability properly to metabolize food substances (carbohydrates).

In the obese individual the obesity is probably a constitutional state that is hereditary. The inherited tendency to fatness is exaggerated and intensified by the inability to take care of carbohydrates and in many instances by other factors, such as overeating and insufficient exercise. With the overweight there is an elevation of blood pressure and finally arteriolar sclerotic changes that may in turn intensify the blood pressure. These sclerotic changes, however, are certainly not early but rather late developments that occur tardily in the course of the syndrome. The fundamental basis for the syndrome would then seem to be obesity with its diminished sugar tolerance, and the control of the condition would seem to be in the adequate treatment of the obesity through carbohydrate reduction. Reduction in weight frequently produces lowering of the blood pressure and the return of the sugar tolerance curve to a relatively normal one.

SUMMARY

A group of thirty obese hypertensive women exhibited a marked lowering of sugar tolerance. A second group of fat individuals without hypertension are shown not to have a hyperglycemia. It seems reasonable to assume that there is no one factor definitely responsible for the combination of obesity, hypertension and hyperglycemia unless it is obesity. The reduction in weight is often associated with a lowering of the blood pressure and a return of a sugar tolerance curve to normal.

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ABSTRACT OF DISCUSSION

DR. HENRY J. JOHN, Cleveland: The incidence of diabetic curves during dextrose tolerance tests in a series of 459 cases summarizes effectively my experience along this line. There are nearly three times as many diabetic curves in the obese as there are in the normal weight patients. It coincides with what has been pointed out in the literature; namely, that obesity predisposes to diabetes. Next is the question of overweight in 528 cases of diabetes. Again the same criterion comes out forcibly; namely, that more than three fourths of patients who have diabetes are or have been overweight before the diabetes developed. This means that patients with normal weight lost weight because of diabetes. In 1,828 patients with diabetes in whom the blood pressure was studied, I found that one half of those of overweight had a pressure above 140, but only one fourth of those of normal weight. I feel, therefore, that the whole problem comes down to one important point; namely, the question of obesity. The treatment of obesity is, of course, very discouraging, and more thought ought therefore to be devoted to prevention. Those who have to treat obesity will agree that it is the most discouraging problem in the whole field of medicine, whereas the prevention of obesity is a much easier problem. I feel that the prevention of obesity will prevent many other conditions that accompany obesity.

DR. HUGO R. ROXY, Chicago: Low sugar tolerance is common in hypertension, regardless of the body weight. Therefore a specific connection between hypertension and low sugar tolerance with obesity could be claimed only if practically every hypertensive obese person would show a low sugar tolerance, and no obese person with normal blood pressure would have low sugar tolerance. This appears to be the case according to the authors' observations, but I am unable to confirm this on the basis of my own data. Out of my seventy-two cases of obesity, all in women above 30 years of age, forty registered blood pressures below 150 systolic, with an average of 130

8. Spence, J. C.: Some Observations on Sugar Tolerance, with Special Reference to Variations Found at Different Ages, *Quart. J. Med.* 14: 314 (July) 1921.

9. Woodruff, R. T.: Some Milder Forms of Diabetes, with Special Reference to Mild Diabetes in Elderly Persons with Arteriosclerosis, *South. M. J.* 17: 145 (March) 1924.

systolic, 83 diastolic. This group is considered a normal blood pressure group. In fifteen of these forty the sugar tolerance was decidedly low, twelve of them showing marked glycosuria during the test. Accordingly, more than one third of my obese patients with normal blood pressure showed a markedly or extremely low sugar tolerance. In thirty-two cases the systolic blood pressures were above 150, the average being 175 systolic, 110 diastolic. In this hypertensive group, seventeen cases showed low sugar tolerance, of which ten exhibited glycosuria at some time during the test. However, the sugar tolerance was normal or even high in fifteen cases; that is, in almost half of this group. These observations do not support the idea of some basic connection of obesity, hypertension and low sugar tolerance. It appears rather that there is some connection between the age of obese patients and the sugar tolerance. I observed that high sugar tolerance is frequent and that low sugar tolerance is rare in the juvenile obese patients, while the opposite is true for the adult obese patient. There are probably several factors instrumental in the frequent change in sugar tolerance with age in obesity. Some of these factors may be due to changes in the aging endocrine system. But the chief factor is probably exogenous in nature: young obese patients, having high sugar tolerance, crave carbohydrates, and with the increased carbohydrate intake overtax their mechanism for carbohydrate utilization, which in turn after years becomes exhausted and inefficient. Hence the shift in sugar tolerance with advancing age.

DR. FREDERICK A. WILLIUS, Rochester, Minn.: The emphasis of the authors on the clinical triad hypertension, obesity and hyperglycemia has been of importance. I wish to confine my remarks to the heart in obesity. The data have been derived from a postmortem study of 136 cases recently completed by Dr. H. L. Smith and me. In all cases the epicardial deposit of fat was increased, in some instances to such a degree that the heart was virtually encased in fat. In practically all cases the fat penetrated into the muscle substance, being deposited in large quantities between the muscle bundles and muscle cells, particularly of the right ventricle. There was not any instance in which a deposit of fat in excess of normal was found within the cytoplasm of the cells. The localization of the fat we believe to be important. Fat is deposited within the cytoplasm of cells predominantly in such states as phosphorus and chloroform poisoning, pernicious anemia, leukemia, and the cachexia of cancer. In 38 per cent of the cases, associated cardiac disease was not demonstrable. Varying degrees of heart failure occurred in 7 per cent of the cases in which pathologic changes other than the increased deposit and penetration of fat did not occur. Of the patients, 44 per cent had had hypertension, and 11 per cent miscellaneous forms of associated heart disease. The weight of the heart in all cases was increased. In the group of patients without associated disease of the heart the average weight exceeded that of the normal hearts of persons of average body weight by 38 per cent; in the group of patients with heart failure but without associated cardiac disease, by 65 per cent, and in the group of patients with hypertension, by 72 per cent.

DR. FRANCIS D. MURPHY, Milwaukee: Reports concerning the incidence of hypertension in diabetic patients have varied according to different authors. Figures have been given showing an incidence as high as 39 per cent and others as low as 14 per cent. In reviewing the complications in 827 cases of diabetes, I found hypertension in 102, or only 11 per cent. Of course, if obese diabetic patients alone were considered, the incidence of hypertension would be a great deal higher. I should like to know from the authors whether blood cholesterol determinations were made of any of the cases. The relationship of hypercholesterolemia to diabetes is well established. The relationship of hypercholesterolemia to arteriosclerosis is not so well established, while the relationship between hypercholesterolemia and hypertension is questionable. I had blood cholesterol determinations made on every patient with hypertension that came into the hypertension and nephritic clinic of the Milwaukee County Hospital for seven years and I came to the conclusion that there was no relationship between hypercholesterolemia and hypertension. More recent work, especially in Germany, has thrown a different light on the subject. It has been pointed out that the amount of blood cholesterol itself is not the deciding factor but that the disturbed ratio between the blood cholesterol

and the plasma protein, the albumin and the globulin, is the factor that influences blood pressure. The solubility of the cholesterol is dependent to some degree on the plasma albumin and globulin. It was shown that with a normal blood cholesterol there may be an oversaturation with cholesterol or that there may be an undersaturation of the blood with cholesterol. It was found that hypertension was associated with a supersaturation of the blood with cholesterol in 90 per cent of cases, while in nonhypertensive cases there was no oversaturation with cholesterol in any case.

DR. EMMET F. HORINE, Louisville, Ky.: The study of Drs. Mussey and Wright brings up some speculative problems. The question that arises is whether the relationship that exists between hypertension and diabetes above the age of 40 is not more apparent than real, since each disease is encountered with greater frequency in the decades above 40. This age incidence may also partly explain the well known association of arteriosclerosis with diabetes. Thirty obese hypertensive patients of the authors exhibited dextrose tolerance curves similar to those of diabetic patients. Their control group of nine nonhypertensive obese patients gave only one curve at all comparable to the fat hypertensive person; hence they conclude that there is a syndrome of hypertension, obesity and hyperglycemia. Hypertensive obese patients often have abnormal dextrose tolerance curves, but possibly it is the pathologic state accompanying the increased blood pressure that provokes the peculiar response to dextrose, and not the obesity. Since widespread involvement of the arterioles throughout the body exists in essential hypertension, it would seem that arteriosclerosis in the pancreas and especially in the islands might be the cause of the changes in carbohydrate metabolism noted by the authors. Thus a study of a series of patients with advanced essential hypertension, regardless of whether they are fat or lean, should reveal a preponderance of abnormal dextrose tolerance curves. Actually, O'Hare, in a study of the dextrose tolerance in hypertension, came to the conclusion that many hypertensive patients are potentially diabetic. Recently in analyzing 233 cases of diabetes admitted to the Louisville City Hospital, I found that 85 (36 per cent) had hypertension. Normal blood pressure levels were found in 106 (46 per cent) and levels below normal in 42 (18 per cent). I may say that before the fortieth year diabetes and essential hypertension rarely occur together but that after this period they are frequently observed in the same individual because of the same age incidence and probably because of the additional factor of disturbance of carbohydrate metabolism secondary to arteriolar changes in the pancreas of the potentially diabetic hypertensive patient. The more I study essential hypertension the more firmly convinced I become that, aside from a hereditary background, its causation cannot be explained at present.

DR. F. R. NUZUM, Santa Barbara, Calif.: I would call attention to another function of the pancreas that may be concerned with hypertension. Abelson and Bardier in 1903 first called attention to a depressor substance in the urine. Pribram and Herrnhiser in 1902 recorded that the nondialysable fraction of human urine caused a fall in blood pressure when injected into experimental animals. E. K. Frey and H. Kraut in 1928 reported exhaustive experiments with this vasodilator substance present in the urine, which, they found, was elaborated by the pancreas, circulated in the blood, and had to do with the regulation of the peripheral circulatory balance. They believe this is a hormone. This substance is an epinephrine antagonist. From work by Frey and Kraut and from that by my associate Dr. A. H. Elliot and myself, this substance has been shown to exert a regulatory influence on arterial tonus. Since it opposes the most powerful pressor substance in the body, epinephrine, and since its presence and amount in the urine can be accurately determined, we have approached the problem of hypertension by measuring the amount of this so-called hormone in the urine of normal persons and of those with essential hypertension. The urine of fifty persons with systolic blood pressures over 150 mm. of mercury was studied. As a control series, the urine of fifty adults with systolic pressures under 140 mm. was used. We found that the excretion of this substance bears a definite correlation with the age of the individual. In the control group under 40 years of age, the twelve-hour output averaged 3,800

units; from 40 to 60 years, 2,773 units, and over 60 years, 1,530 units, a drop in each group of, roughly, 1,000 units. In the group of fifty individuals with essential hypertension, those under 40 years of age averaged a twelve-hour output of 1,695 units; those between 40 and 60 years averaged 1,333 units, and those over 60 years averaged 635 units. The possibilities of this hormone as related to treatment are pertinent. The pancreas elaborates this material, which neutralizes the effect of the vasoconstrictor, epinephrine. Our studies have shown a lessened output of the hormone in hypertension. There is as yet no accurate method of determining the amount of epinephrine in the circulating blood; but if it is present in an abnormal amount or if its constricting action is not sufficiently opposed by a depressor substance, hypertension might well result.

DR. JOHN H. MUSSER, New Orleans: Dr. Wright and I do not mean to imply that every fat woman who has passed the age of 40 and who has a hypertension necessarily has to have a hyperglycemia, nor do we mean to imply that every fat woman past the age of 40 who has a hyperglycemia necessarily has to have a hypertension. A goodly number of them do, however, and I think they present a rather interesting syndrome. In the majority of instances their outstanding complaints are cardiovascular rather than metabolic, yet it is through the control of the metabolic process, which I believe is fundamental, that the cardiovascular disturbances are kept in check. I can answer Dr. Murphy by saying that we have not made cholesterol estimations on these people.

PRESENT POSITION OF OUR KNOWLEDGE OF ANTERIOR PITUITARY FUNCTION

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BERKELEY, CALIF.

One of the most dramatic chapters in the progress of modern medicine is the story of the evolution of our knowledge of the pituitary body, that minute glandule situated almost in the mathematical center of the head, regulating as it does those fundamental mechanisms of growth, reproduction and even the power of the body to conduct its normal metabolic machinery. The story, too, is only typical for what may be told of other parts of the endocrine mechanism of the body so that I trust that this meeting of the Congress of American Physicians and Surgeons may gain significance in the future as having marked a turning point in the kind of interest displayed toward certain fields of medical research.

We are conceivably at the inauguration of a new era, an era which shall witness the same startling disclosures and confer on us the same beneficent instruments of prevention and control as characterize what I may term the bacteriologic epoch so gloriously inaugurated by the labors of Louis Pasteur and Robert Koch. Endocrinology, which suffered obstetric deformation in its very birth by the extravagant claim of the septuagenarian Brown-Séquard that he had magically restored his youth with testicular substance, has continued to suffer the same sort of obloquy through similar claims of the modern Steinach school, whereas to be an endocrinologist among the practicing profession today means too often to be primarily concerned with making fat ladies thin. In research, matters are hardly better. No institute of any importance devoted to medical or biologic research has concerned itself wholly or even partly with the field of the endocrines, and few uni-

versity departments have done so. Yet this kind of inquiry has given to medicine the greatest single new therapeutic achievement in our day—the discovery of insulin. And the domain of endocrinology, both for clinical study and for laboratory investigation, affords a realm where, in many phases, exactitude in observation and quantitative results may be assured.

It is of special significance, too, Sir, that you¹ preside at this meeting. It was you who had the courage to attack the problem of the essentiality or nonessentiality of the pituitary gland for life itself and to show error in the claims of the Rumanian surgeon Paulesco that, following complete hypophysectomy, death need inevitably supervene. It is to your early efforts that we owe the first experimental production of the adiposogenital syndrome in animals—it is to them that we owe the earliest inquiry into the upset of carbohydrate metabolism, which is so thrilling a chapter in the narrative of current discovery, so that quite apart from the production by you² in 1912 of a clinical monograph which shall forever be a landmark in this subject, we owe a series of studies into the physiology, normal or disordered, of the pituitary, the most recent but surely not the last of which, is your recognition of the new clinical syndrome furnished by basophilic adenomas³—studies so abundant that with them alone my whole brief hour here could easily be concerned.

To the historian of science it will perhaps appear remarkable that so long a time was consumed by the period of indecision as to whether the hypophysis was or was not essential for life; he will, of course, be aware of the fact that in this epoch surgical technic was in full possession of asepsis, anesthesia and the control of hemorrhage and had not hesitated to enter the calvarium, succeeding, for instance, in the difficult removal of brain neoplasms and other intricate procedures.

To what, then, may be attributed so long a dispute as that waged by skilful experimenters over the dispensability or indispensability of the gland? This may be attributed to two causes: first, to the deaths that followed mysteriously within a few days the operations of very skilful surgeons, where the complicity of infection and hemorrhage were eliminated but where we now know brain injury was inevitable; and, second, to the tardiness with which successful experimenters furnished that indubitable proof of complete removal given by subsequent sacrifice of the animal and microscopic exploration by serial section of the whole contiguous base of skull and brain; persisting fragments are now known to exercise a beneficent influence which is outstanding. As regards this point, seven pieces of research have now adequately furnished the criteria essential for establishing the fact that no portion of the hypophysis is essential for the continuance of life itself.

As regards the first point, in spite of great skill, misfortune attended those early investigators who chose a dorsal or lateral temporal opening of the calvarium from which the singularly deep hypophysis is hardly accessible without contusion of the brain. Thus the features of the syndrome once designated as cachexia

1. Reference is made to Dr. Harvey Cushing, president of the congress.

2. Cushing, Harvey: *The Pituitary Body and Its Disorders*, Philadelphia, J. B. Lippincott Company, 1912.

3. Cushing, Harvey: *The Basophil Adenomas of the Pituitary Body and Their Clinical Manifestations (Pituitary Basophilism)*, Bull. Johns Hopkins Hosp. 50: 137-195 (March) 1932.

hypophysiopriva were really all due to the almost unavoidable brain injury and none of them to injury to the gland itself.

Approach from below, through the sphenoid, either through the nose, mouth⁴ or pharynx,⁵ especially in forms like the rat, in which not only is the cavity of Turk's saddle well separated from the cavum crani by the diaphragma sellae but the pituitary is fortunately not firmly attached to its sheath and can be aspirated without traction on or rupture of the diaphragma, or again the clever use of Weed's contrivance for physiologic "shrinkage" of the brain by intravenous hypertonic salt solution⁶ has enabled a considerable and growing number of operators to remove the whole gland in a high proportion of all cases without immediate postoperative fatalities. The achievements of Smith,⁵ Dandy and Reichert,⁶ Reichert,⁶ Van Dyke and Wallen-Lawrence,⁷ Pencharz,⁸ Selye⁹ and others have answered in the negative once and for all the question as to imminent death from removal of the pituitary. Complete removal of the gland is compatible with the continuance of life. Future research will sustain me, however, in stating that it will be possible to prove that mal-effects from the ablation occur immediately and continue to grow graver even though they do not for a considerable time imperil life.

Complete ablation of the gland invariably leads to a serious abnormal state variously tolerated by various individual animals. Some long survivals and many moderately long ones have been secured by the investigators mentioned. Most hypophysectomized animals, surviving the operation, succumb from this cachexia before anything like a normal life span has been passed. It can be confidently predicted that the marked limitation in the life of hypophysectomized animals will become apparent as soon as even approximate statistics become available concerning the fate of large numbers of such animals under ideal conditions; i. e., when submitted to no subsequent procedures and surrounded with every hygienic care. It cannot be said that investigators have intentionally obscured this truth by failure to publish their mortality data; they have merely had more immediate duties—they have wisely employed such animals in various physiologic tests involving risk and they have intentionally sacrificed most of them for study.

These surgical triumphs have in a way, then, closed one era in experimentation in this field; but in a more important sense they have inaugurated another one, for they have now furnished the most conclusive test objects conceivable for replacement therapy—the only final answer as to whether or not all the essential chemical substances furnished by the gland have been captured in extracts.

4. McLean, A. J.: Transbuccal Approach to Encephalon in Experimental Operations upon Carnivorous Pituitary, Pons, and Ventral Medulla, *Ann. Surg.* 88: 985 (Dec.) 1928.

5. Smith, P. E.: The Disabilities Caused by Hypophysectomy and Their Repair, *J. A. M. A.* 88: 158 (Jan. 15) 1927; Hypophysectomy and a Replacement Therapy in the Rat, *Am. J. Anat.* 45: 205 (March) 1930.

6. Dandy, W. E., and Reichert, F. L.: Studies on Experimental Hypophysectomy: Effect on Maintenance of Life, *Bull. Johns Hopkins Hosp.* 37: 1 (July) 1925. Reichert, F. L.: The Results of Replacement Therapy in a Hypophysectomized Puppy: Four Months of Treatment with Daily Pituitary Heterotransplants, *Endocrinology* 12: 451 (July-Aug.) 1928.

7. Van Dyke, H. B., and Wallen-Lawrence, Z.: On the Growth-Promoting Hormone of the Pituitary Body, *J. Pharmacol. & Exper. Therap.* 40: 113 (Dec.) 1930.

8. Reichert, F. L.; Pencharz, R. I.; Simpson, Miriam, E.; Meyer, Karl, and Evans, H. M.: Ineffectiveness of Prolan in Hypophysectomized Animals, *Proc. Soc. Exper. Biol. & Med.* 29: 843-844 (May) 1931.

9. Collip, J. B.; Selye, H., and Thomson, D. L.: Gonad-Stimulating Hormones in Hypophysectomized Animals, *Nature* 131: 56, 1933.

THE GROWTH HORMONE

The condition produced by complete removal of the hypophysis is, as has been explained, an abnormal one, although adult animals, save for genital regression, may not for some time show external deviation from normality and thus disguise the fact that both function and structure of the body have suffered serious change. Moreover, it is a safe prediction that as increased analysis of the bodily mechanism of hypophysectomized animals is made, other features of the state which can be strictly designated cachexia hypophysiopriva will increasingly come to light. On the other hand, when the gland is removed from young animals, the most impressive evidence that normal processes have been interfered with is soon furnished by their failure to grow.

If the anterior lobe has been completely removed, growth stasis is immediate and almost, if not quite, absolute and careful postoperative registration of body dimensions by the measurement of skiagrams¹⁰ will bring conviction here. It is indeed only in this way that proof may be secured of the totality of the removal. The growth stasis carries with it also the survival of the status quo as far as the childlike proportions and many if not all juvenile structural peculiarities—such as the possession of only milk dentition, the characteristically fine (lanugo) hair coat, and open epiphyseal cartilages. Yet this state is hardly the desirable one of "perpetual youth," for the capacity of the body in many measurable ways has been injured. Nor, structurally, have we permanent youth, for we now know that many abnormal anatomic changes begin to intervene slowly—changes which mark off these dwarfs as peculiar—e. g., the actual shrinkage of the epiphyseal cartilages, the gradual obliteration by dentin of the pulp cavities of the incisors,¹⁰ and so on. There seems no question but that we have to do with disturbance of calcium metabolism after hypophysectomy, as reflected in the decreased calcium content of the blood; whether this is due to the correlated subnormality of the parathyroid glands remains to be established. Changes in the parathyroids as a result of hypophysectomy have not been adequately studied as yet. It is difficult to view the cessation of growth of the skeletal system as essentially due to disturbance in the inorganic metabolism; it is more justifiable to refer it to a singular failure in cartilage proliferation in the epiphyseal disks and, of course, the dwarfism is participated in by all the organs and tissues of the body. The experimental production of hypercalcemia in hypophysectomy by means of parathyroid extract has not yet interested any experimenter.

To what extent have the growth defects of hypophysectomized animals been remedied by the conveyal to them of growth hormone? To a complete extent. In the cases of a very great number of hypophysectomized dwarf rats and in several hypophysectomized puppies completely normal stature or stature slightly in excess of normal has been thus obtained. Reichert's work with hypophysectomized puppies warns us that such growth hormone extracts must be free of gonadotropic effect else the provocation of sexual maturity may be associated with epiphyseal closure and the cessation of growth.

Hypophysectomized animals are enormously more sensitive to growth hormone than are normal ones and

10. Schour, I., and Van Dyke, H. B.: Effect of Hypophysectomy on the Incisor of the Rat, *Proc. Soc. Exper. Biol. & Med.* 28: 934 (June) 1931.

they thus constitute the test material *par excellence* for quantitative measures of the growth hormone in extracts. But since they are not easy to produce in large numbers or to maintain in good health, it is fortunate that satisfactory growth tests¹¹ can be carried out by administering growth hormone to certain mammalian forms in which, though adulthood is reached, epiphyseal closure is singularly delayed and power to grow under stimulus retained for most of the span of life. I refer to rats and mice. Like some of the lower vertebrates, fish and turtles, the rat grows almost throughout life but it does not do so with anything like a uniform rate. Though its epiphyses are open, its adulthood is indicated by a sharp change, even if not a halt, in the growth rate and by very slow accretions of body substance after that date. We are always safely past this knuckle of the growth curve by the fifth month of life in the case of the female and the seventh month in the male, and we now use just these animals on which to confer by our various extracts unusual growth. That this growth is not adiposity but is participated in by all the tissues of the body is shown by roentgenograms of the skeletal system and by the chart of their various organ weighings. The point I wish to bring out at present is that in our modern efforts to get the growth hormone in pure form we no longer feel compelled to treat animals for many weeks or months but select animals at any time between the fifth and the ninth month of life, when they are on the so-called growth plateau. We follow the accretions of their body weight at five day intervals for three or four weeks, and if an approximate plateau can be demonstrated for an individual we call it a satisfactory test animal and convey to it intraperitoneally any supposed growth-containing extract. In the case of impotent solutions, no significant growth results; but with potent solutions sooner or later an outspoken response is met. We are in this way forced to observe animals in the preexperimental period merely for three weeks and in the experimental period for three weeks. Hundreds of test creatures can be stored and when the time comes easily observed and studied in this simple way.

The production of gigantism has not been limited to the rat. It has not been difficult to produce it in the dog, in which, however, knowledge of the stature to be expected in a pure genetically known strain must be insisted on. In such a strain of pure bred dachshunds, in which, moreover there were litter-mate brothers and sisters, we have in five months produced monstrous animals;¹² they are not only much greater in size and weight than their controls, but they already show peculiarities which one expects to continue when epiphyseal closure determines the cessation of growth of the long bones. I refer to specific widening changes in the skull and to overgrowth of the skin shown in remarkable ringlike folds about the legs and in the head and neck, which almost close the eyes and produce laplike appendages to the cheeks or jaws. The American anatomist Stockard¹³ prophetically assigned these skin changes seen, for instance, in the Saint Bernard but not in the Great Dane, to acromegaly, though at the time of his statement last spring no one had yet produced them.

Three years ago, Putnam, Benedict and Teel¹⁴ of Cushing's laboratory reported acromegalic changes in an English bulldog treated for over a year, but in this form they had unfortunately chosen a skull type already distorted by chondrodystrophy and in which, therefore, their end-result presented the effects of two disorders. The changes provoked in the face and long thin head of the shepherd by administering the growth hormone, whereby a grotesque shift to a caricatured bloodhound type has been produced, enable me, I believe, to state that for the first time specific changes have been produced by administering a specific agent to a form in which these changes never normally occur.

The question will be asked, To what degree of purity has the growth hormone been brought? It is easy to produce a white hygroscopic powder stable for months at room temperature in dry, air-exhausted chambers and capable of promoting maximal growth in adult female rats in doses of considerably less than 0.5 mg. daily. The powders have almost 15 per cent of nitrogen all in the form of protein or a protein-like body, and it is difficult to break them down further without losing efficacy. It appears that just as they are proving helpful in the isolation of enzymes, selective adsorption methods will be of great importance here.

THE GONADOTROPIC AND LACTOGENIC HORMONES

Most impressive, perhaps, of the changes caused by removal of the pituitary is the failure of development of the genital system in hypophysectomized youths or infants; indeed, the regression of the system in adults, whether in male or female. The testes shrink to vestigial structures in which the atrophic tubules, while never free from spermatogonia, no longer contain the four cell layers of epithelium, the accessory organs (prostate, seminal vesicles, Cowper's glands, and so on) are minute; in the female, similar recession of the uterus, tubes and ovaries ensues, but microscopic examination of the ovaries shows fairly abundant primordial ova and young follicles, overtaken, however, by atresia before any considerable enlargement has taken place.

While, then, clearly in the female, and also in the male, it is impossible to say that all germ cells have disappeared, and while, as I shall presently recount, germ cell production can be reinvoked in such animals by the conveyal to them of the "sex" hormone of the anterior lobe, the growth and maturation of germ cells is absolutely in abeyance and furthermore that other activity of the gonads—both male and female—their endocrine as well as gametogenic activity, is suspended. I refer to the internal secretions—from whatever gonadal tissue they spring—which are responsible for the production of the male and female true sex hormones and thus for the secondary sexual characters and characteristics. These animals show no more structural evidences of their sexual dimorphism than were present at the time of the operation and never manifest sex interest or desire.

Just as the antithesis of dwarfism can then be produced by the gigantism of hyperpituitarism, so also a similar antithesis exists as regards the sex hormones in the anterior hypophysis; for here also the sexual infantilism seen after ablation of the hypophysis can be contrasted with a stimulation of the organs of sex by conveying hypophyseal tissue or hormones to animals be they infantile or adult.

11. Evans, H. M., and Long, J. A.: The Effect of Anterior Lobe Administered Intraperitoneally upon Growth, Maturity, and Estrous Cycles of the Rat, *Anat. Rec.* 21: 62-63, 1921. Evans, H. M., and Simpson, Miriam E.: Hormones of the Anterior Hypophysis, *Am. J. Physiol.* 98: 511-546 (Oct.) 1931.

12. Evans, H. M., Meyer, Karl, Simpson, Miriam E., and others: Growth and Gonad-Stimulating Hormones of the Anterior Hypophysis, *Memoirs University of California*, 11, 1933, to be published.

13. Stockard, C. R.: The Physical Basis of Personality, New York, W. W. Norton & Co., 1931.

14. Putnam, T. J.; Benedict, E. B., and Teel, H. M.: Studies in Acromegaly: Experimental Canine Acromegaly Produced by Injection of Anterior Lobe Pituitary Extract, *Arch. Surg.* 18: 1708 (April) 1929.

The circumstances that had led up to the detection of the sex hormone of the hypophysis are interesting in the extreme. In the spring of 1926, Zondek and Aschheim¹⁵ of Berlin, seeking to influence the immature genital system in rodents (rats and mice) by various endocrine products and implants of endocrine tissues, happened to introduce bits of anterior hypophyseal tissue under the skin, to find the complete establishment of sexual maturity in these infants in from three to five days. In the same year and without knowledge of the Berlin experiments, which were only mentioned, indeed, in the briefest possible way in a note in the *Klinische Wochenschrift*, Smith,¹⁶ of our laboratory, made the same discovery. Though there is evidence of corresponding stimulation of the youthful male gonads, it is the ovary which gives a speedily ascertained and unassailable picture of this effect, for large follicles and, above all, corpora lutea appear there for the first time.

Just as it is possible to extract the growth hormone from the hypophysis, so also we can now extract the gonad-stimulating hormone from hypophyseal tissue. Another and more convenient source of this hormone, however, was thought to have been discovered by Aschheim and Zondek,¹⁷ and the circumstances of its discovery are dramatic. During pregnancy, for reasons quite unknown to us, the estrous hormone, or folliculin, is produced by the body in great quantity—at a time, indeed, when, according to our present very limited ideas, physiologic demands for it must be nonexistent. It was encountered by Loewe,¹⁸ Laqueur, Zondek and others in great quantities in the full-term placenta and finally also in very considerable quantities in the blood and in the urine of pregnant women. It has been known for many years that the hypophysis is strangely enlarged in pregnancy, though the cause for that enlargement has been obscure. What more natural thing than to search not only for the ovarian but for the hypophyseal sex hormone in the fluids and tissues at the time of pregnancy? It also occurs in great abundance at this time in both the placenta and the urine and, in contradistinction to the ovarian hormone, occurs so early in pregnancy as to constitute the means of recognizing conception as soon as the first missed period has occurred, twenty-one days from coitus, a diagnostic possibility not hitherto possessed at so early a date. A unique advantage has accrued through the occurrence of this hormone (prolan) in the urine, in which, normally, much contaminating protein is absent. The ovarian hormone admixed with it can also be practically all withdrawn by virtue of its greater solubility in organic solvents (such as ether). By devices of this sort, over three years ago, my associates and I easily obtained colorless solutions of this urinary hormone, protein free and almost nitrogen free, which could be reduced in vacuo to a white powder and stored at low temperatures, to be redissolved later. Our tests of its efficacy tally with those of Wiesner. In the purest form in which it is prepared by routine in our laboratory, it can produce effects in young rodents in a total dose of 2 mg. Two claims of crystallization of

this substance have recently been made. This is not the sex hormone of the anterior hypophysis. Our capacity to distinguish this particular substance, also a hormone—prolan—from the true sex hormone of the hypophysis rests on clear evidence, presently to be detailed, of a characteristic difference in the biologic effects worked by prolan and by the true anterior hypophyseal sex hormone.

No questions exceed in interest those relating to the origin and true nature of prolan. First as regards its site of origin, Philipp¹⁹ and others abroad and Collip in this country have championed the view that involves its production by the placenta. The cases presented by genital carcinoma and especially by chorio-epithelioma, whether in male or in female, cannot well be considered as decisive for either view. On the one hand, this tissue could itself elaborate prolan just as do the young normal chorionic villi (if they do), for in most cases implants of the actual tissue in question show it housing lively amounts of prolan. On the other hand, these tissues may really only store the hormone which they stimulate the hypophysis to overproduce. Yet, recently, peculiar instances of the class of cases in which prolan is ordinarily always abundant have been found with prolan practically absent and they have been cleverly drawn into the support of the view of the placental origin of prolan. I refer to cases of hydatidiform mole and last month's report of a remarkable instance of ovarian pregnancy with a living fetus, in both of which cases an exceedingly thick boundary zone (*durchdringungszone*)—a massive fibrin layer—was interposed between fetal and maternal tissues—a zone conceivably preventing (as Robert Meyer first suggested) the diffusion maternalward of prolan, shown by implants to be present in those membranes. The adherents of the view of the fetal origin of prolan also point out that in most cases the death but retention of the fetus involves the prompt cessation of the Aschheim-Zondek reaction in the urine. Nor have these investigators failed to turn their attention to the hypophysis itself. They remind us that whereas prolan is abundant in the blood and urine shortly after the first missed period, characteristic changes in the hypophysis itself, above all the appearance of the so-called pregnancy cells, are not found before the end of the second month, or in primiparas even later. Finally, they point to the fact that the human hypophysis in pregnancy is even devoid of the hormone, as determined by the ineffectiveness of implants.

Now I should like to call attention to recent experiments and developments which are crucial in my estimation for the contention of a hypophyseal origin of prolan; these relate to its prompt appearance in the blood and urine of males or females after complete surgical ablation of the gonads. It is true perhaps that absolute rigor of proof of hypophyseal origin here will demand simultaneous hypophysectomy with gonadectomies, and we are involved in such a research program.

Now, as regards the nature, chemical and biologic, of prolan, the hypophysis-like substance occurring in the urine of pregnant women, our little group of workers perhaps deserves the distinction of having first shown that prolan, while gonadotropic, is a different and less effective substance than the true gonadotropic hormone as found in the hypophysis itself. Let me

15. Zondek, Bernhard: Ueber die Funktion des Ovariums, *Deutsche med. Wochenschr.* 52: 343 (Feb. 19) 1926.

16. Smith, P. E.: Hastening Development of Female Genital System by Daily Homoplastic Pituitary Transplants, *Proc. Soc. Exper. Biol. & Med.* 24: 131 (Nov.) 1926.

17. Aschheim, Selmar, and Zondek, Bernhard: Hypophysenvorderlappenhormon und Ovarialhormon im Harn von Schwangeren, *Klin. Wochenschr.* 6: 1321 (July 9) 1927.

18. Loewe, S.: Ueber weibliche Sexualhormone: II. Nachweis brünstereogender Stoffe im weiblichen Blute, *Klin. Wochenschr.* 4: 1407, 1925.

19. Philipp, E.: Die Bildungsstätte des "Hypophysenvorderlappenhormons" in der Gravidität, *Zentralbl. f. Gynäk.* 54: 1858 (July 26) 1930.

enumerate the differences in biologic action which have now been made out with regard to prolactin in contrast to the true gonadotropic hormone of the hypophysis: 1. We²⁰ early discovered that there is a sharp limit to the effects which may be secured in 100 hours by administering any amount of prolactin, no matter how frequent the interval between doses given young normal immature animals (rats), whereas increasing amounts of the true gonadotropic hormone from anterior lobe tissue always give increasing effects on the genital system of the young recipients. In this way it can easily be shown that the substance in the blood stream and placenta as well as in the urine of pregnant women is prolactin unadmixed with the true hypophyseal gonadotropic hormone. 2. Prolactin is ineffective in increasing the development or weight of the testes in young birds (chicks or pigeons).²¹ 3. Prolactin will apparently not cause "reddening" of the sexual skin in *Macacus* and related forms, whereas hypophyseal hormone accomplishes this readily.²² 4. Finally, prolactin is strikingly ineffective in hypophysectomized animals. We were able to show that, even with massive doses, chronically administered, prolactin may be ineffective in stirring the sexual system of hypophysectomized animals and is always less effective than in normal ones.²³ This experience led us to the conviction that the hypophysis itself must aid, in some obscure way, the action of prolactin, and it led us to seek for that hypothetic substance in hypophyseal extracts. We found it abundantly present in the simple alkaline aqueous extracts which we were accustomed to making for securing the growth hormone, and for a time it seemed possible to us that the growth hormone itself might be transformed into the gonad-stimulating hormone. Certain only was the fact that these hypophyseal extracts conferred on prolactin a strangely increased potency—a potency now comparable to or exceeding the best that could be secured in extracts of the hypophysis containing the gonadotropic hormone itself. These facts, which we designated the activation of prolactin, were quickly confirmed by other investigators (e. g., Leonard²⁴) and it was also shown that extracts of the glands rich in the gonadotropic hormone itself and free of the growth hormone could equally well be still further activated in their gonadotropic properties by the addition of prolactin. The research of the last few months at the Rockefeller Institute, where I am a guest, has enabled us to show that this hypophyseal constituent is, however, not the well known gonadotropic hormone of the anterior lobe but is a body having different chemical and biologic characteristics.²⁵ This body, the so-called activator of prolactin when it is added to the latter, confers a stimulus to the gonads in excess of anything we have hitherto

observed, save that produced by the highly concentrated gonadotropic hormone of the pregnant mare's blood stream. The hypophyseal substance has made it possible to rival easily or to exceed the maximal effects secured by the equine hormone and will probably prove the supreme agent for gonadotropic therapy in the future. By means of it, the ovaries of infantile rats are increased from 15 to 300 mg. in weight in ninety-six hours and approach in size the dimensions of the kidneys.

Besides its therapeutic importance, an equally important consequence of the detection of the new hypophyseal substance is the fact that it furnishes an important new tool with which to recognize the presence of prolactin-like bodies in the blood and urine of animals, both in pregnant and in various nonpregnant conditions. And we cherish the hope—I speak of the studies of the last few weeks—that by means of this new weapon we can clear up the hitherto puzzling enigma of the presence of prolactin-like bodies in primates but their absence in all other animal forms.

Highly interesting are the recent clear evidences of a direct relation of mammary secretion to hypophyseal influence—a field opened by the studies of Corner²⁶ and to which Riddle²⁷ has brought evidence which will soon, if it does not indeed now, convince critical workers of the existence of another hypophyseal hormone—the lactogenic. When it was discovered a few years ago that the condition of pseudopregnancy involved the elaboration of secreting alveoli in the mammary tree, it was settled that these things owe nothing to the presence and possible internal secretion of the fetus, extracts of which in Sir Ernest Starling's²⁸ hands had seemed to evoke the same response. The question was now only which one of the endocrines was concerned in mammary development and from the work of the Bouin school in Strasbourg it seemed likely that this could be shown to be a direct effect of the hormone of the corpus luteum. It was fortunate, then, that the discoverer of the luteal hormone, Corner, should have made it clear that this substance alone is powerless to achieve these effects. The story is only complicated by the fact that a structurally perfect mammary tree must be built up before the lactogenic hormone can provoke, as it does, true milk secretion.

RESPIRATORY METABOLISM AND THE THYROID HORMONE

The important clinical studies of Loewe, of Zondek and of Brütt and Knipping²⁹ showed strikingly low basal metabolic rates in cases in which the diagnosis of cachexia hypophysiopriva was confirmed by the finding of definite pituitary destruction or impairment at the autopsy table. Furthermore, a marked lowering of the specific dynamic action of food has been reported in pituitary disease, especially in the Frölich adiposity (Rolly, Plaut, Bernhardt). Yet it is evident that, for conviction here, all studies should be carried out on animals in which purposeful isolated injury of the hypophysis without concomitant brain injury has been made. It was therefore only when nonadipose dwarfs

20. Evans, H. M., and Simpson, Miriam E.: A Comparison of the Ovarian Changes Produced in Immature Animals by Implants of Hypophyseal Tissue and Hormone from the Urine of Pregnant Women, *Am. J. Physiol.* 89: 371-374 (July) 1929. Evans, H. M., Meyer, Karl, and Simpson, Miriam E.: Relation of Prolactin to the Anterior Hypophyseal Hormones, *Proc. Soc. Exper. Biol. & Med.* 28: 845-847 (May) 1931; *Am. J. Physiol.* 100: 140-156 (March) 1932.

21. Riddle, Oscar, and Polhemus, Irene: Studies on the Physiology of Reproduction in Birds: XXXI. Effects of Anterior Pituitary Hormone on Gonads and Other Organ Weights in the Pigeon, *Am. J. Physiol.* 98: 121 (Aug.) 1931.

22. Engle, E. T.: Differences in Response of Female *Macacus* Monkey to Extracts of Anterior Pituitary and of Human Pregnancy Urine, *Proc. Soc. Exper. Biol. & Med.* 30: 530, 1933.

23. (a) Reichert, F. L., Pencharz, R. I., Simpson, Miriam E., Meyer, Karl, and Evans, H. M.: Ineffectiveness of Prolactin in Hypophysectomized Animals, *Proc. Soc. Exper. Biol. & Med.* 28: 843 (May) 1931; (b) Relative Ineffectiveness of Prolactin in Hypophysectomized Animals, *Am. J. Physiol.* 100: 157 (March) 1932.

24. Leonard, S. L.: Increased Stimulation of Immature Rat Ovaries by Combined Injections of Prolactin and Hypophyseal Sex Hormones, *Proc. Exp. Biol. Med.* 30: 403, 1932.

25. Evans, Herbert M., Miriam E. Simpson and Paul R. Austin: The Hypophyseal Substance Giving Increased Gonadotropic Effects When Combined with Prolactin, *J. Exper. Med.* 57: 6, 897, 1933.

26. Corner, G. W.: The Hormonal Control of Lactation, *Am. Jour. Physiol.* 95: 43-55 (Oct.) 1930.

27. Riddle, Oscar; Bates, Robert W., and Dykshorn, Simon W.: A New Hormone of the Anterior Pituitary, *Proc. Soc. Exper. Biol. & Med.* 21: 1211 (June) 1932.

28. Lane-Clayton, Janet, E., and Starling, E. H.: An Experimental Inquiry into the Factors Which Determine the Growth and Activity of the Mammary Glands, *Proc. Roy. Soc., B* 77: 55, 1906.

29. Brütt, H., and Knipping, H. W.: Die Gasstoffwechseluntersuchung in der Chirurgischen Klinik, *Ergebn. d. Chir. u. Orthop.* 21: 1-67, 1928.

from hypophysectomy were available that satisfactory studies could be made, and the work of Foster and Smith³⁰ represents the only critically acceptable research here. They have shown a very marked lowering of the basal metabolic rate. When the posterior lobe alone was removed, no such decrease was observed.

Highly interesting were their conclusions regarding specific dynamic action. Hypophysectomized rats fail entirely to show specific dynamic action. The authors correlate this with the invariable injury to thyroid function caused by absence of the hypophysis in view of the discovery of Baumann and Hunt³¹ (which they confirm) that thyroidectomy obliterates the specific dynamic action. Now the implantation of anterior lobe alone, or of posterior lobe, did not repair this failure to respond to glycocholl but implants of the whole gland did so. This is the only instance known to me of the synergism of the anterior and posterior pituitary lobes so often asserted but in no other respect established.³²

Four years ago, these investigators showed a remarkably increased sensitivity to thyroid on the part of hypophysectomized rats, and it is of interest that the effect of thyroid was almost twice as great in hypophysectomized animals as in thyroidectomized ones. In thyroidectomized animals the increase in basal heat production caused by thyroid was about four times that in normal animals given thyroid, but in hypophysectomized animals it was about eight times greater. An explanation of this has not as yet been furnished.

The thyroid epithelium in the hypophysectomized rat becomes reduced to the squamous type and the nuclei are flattened; the vesicles contain approximately the normal amount of colloid, and possibly for this reason the reduction in weight of the glands is not so pronounced as it would otherwise be.

Subnormality of thyroid function is always evident after hypophysectomy in the very low basal metabolic rate, but it is highly interesting that complete ablation of the thyroids cannot cause so low a basal metabolism as supervenes after hypophysectomy, so that other factors contribute to produce the great lowering and the injured adrenals may contribute to it, since Ant, Forman and Bright (1922) and Zweimer (1929) have shown a fall in metabolism after suprarenalectomy. Anterior hypophyseal extracts quickly restore the thyroid, as determined by complete change of squamous to cubical or cylindric epithelium, which may come to look like that of exophthalmic goiter, and by rapid rise of the basal metabolic rate. The hypophyseal hormone accomplishing these results, the thyrotropic hormone, may be clearly separated from the growth hormone, for unlike the latter it is not completely precipitated from aqueous extracts of the gland by trichloroacetic acid.

Now just as growth and sex hormones can be tested by their action on normal young or old individuals, so also the thyrotropic hormone can be adequately tested. In fact, convincing evidence of the existence of this hormone was first furnished by Loeb in this country and Aron³³ of Strasbourg in the rapid change it pro-

voked in the epithelium of the thyroid vesicles of young guinea-pigs. Schockaert showed that ducks are particularly sensitive to its administration, and by it he produced for the first time experimental exophthalmos, an achievement recently similarly secured in the mammal by Anderson³⁴ of Collip's laboratory, and only yesterday by Marine³⁵ of New York.

Entirely enigmatic at present is the singular rather rapid wearing out of thyrotropic effects with continuous administration of the hormone.

ADIPOSITY

An important contribution was made by Camus and Roussy³⁶ of Paris in 1921, when they showed that the adiposities with which pituitary ablation had been so often accompanied could be produced by slight injuries to the superficial gray of the tuber cinereum near the hypophysis but with the hypophysis itself perfectly intact. This story was confirmed by Bailey and Bremer, by Smith and by others. All recent hypophysectomies have shown convincingly that without brain injury one can regularly secure perfect dwarfism from hypophysectomy without traces of adiposity. The conception of a direct relation of the hypophysis to fat metabolism has hence lost caste.

In 1931, Anselmino and Hoffmann³⁷ reported the occurrence of a substance in the anterior lobe which, when injected into rats, rabbits, dogs and human beings, causes a rise of the acetone bodies in the blood. This substance is in its physical and chemical properties similar to the other known anterior lobe hormones. But it is separable from the growth, gonadotropic, thyrotropic and lactogenic hormones by means of ultrafiltration. So this principle is not identical with any other known principle. It occurs in the blood stream and has been isolated from the urine by Casimir Funk.

It has been found by Anselmino and Hoffmann that under physiologic conditions the substance appears in the blood stream only when fat is burned. After a fatty meal or in hunger, when the acetone bodies in the blood rise, the substance is found in the blood and can be assayed with the rat test. From various facts the authors conclude that this substance has a regulatory function in the fat metabolism. These facts are: primarily the physiologic occurrence of the substance in the blood only when fat is burned, not under other conditions; secondly, the well known connection of acetone bodies with fat combustion or transformation; and, finally, the old clinical observation of a connection of the anterior lobe with certain forms of obesity, just recently again shown by Cushing³ in his new anterior lobe syndrome, the basophilism. It is this group of facts, at any rate, which have induced these authors to call this substance, not yet completely characterized, the fat metabolism hormone of the anterior lobe.

34. Reichert, Pencharz, Simpson and Evans,^{22a} Anderson, Evelyn M.: The Production of Hyperplasia of the Thyroid with Hyperthyroidism in the Albino Rat—A Preliminary Report, *Canad. M. A. J.* 28: 283 (Jan.) 1933. Anderson, Evelyn M., and Collip, J. B.: Thyrotropic Hormone of Anterior Pituitary, *Proc. Soc. Exper. Biol. & Med.* 30: 680 (Feb.) 1933.

35. Marine, David, and Rosen, S. H.: Exophthalmos in Thyroidectomized Guinea-Pigs by Thyrotropic Substance of Anterior Pituitary, and the Mechanism Involved, *Proc. Soc. Exper. Biol. & Med.* 30: 901-903, 1933.

36. Camus, J., and Roussy, G.: Les fonctions attribuées à l'hypophyse, *Ann. Physiol. et de gén.* 20: 535, 1922. e, *ibid.* 20: 507-518, 1922.

30. Foster, G. L., and Smith, P. E.: Hypophysectomy and Replacement Therapy in Relation to Basal Metabolism and Specific Dynamic Action in the Rat, *J. A. M. A.* 87: 2151-2153 (Dec. 25) 1926.

31. Baumann, E. J., and Hunt, L.: On the Relation of Thyroid Secretion to Specific Dynamic Action, *J. Biol. Chem.* 64: 709-726 (July) 1925.

32. The study of the specific dynamic effect in cerebral adiposities experimentally produced would be particularly important. Brütt and Knipping report remarkable restitutions of the effect in cases of Fröhlich disease by giving certain anterior hypophyseal preparations.

33. Aron, M.: Action de la préhypophyse sur la thyroïde chez le cobaye, *Compt. rend. Soc. de biol.* 102: 682-684 (Nov. 29) 1929.

CARBOHYDRATE METABOLISM AND A DIABETO-GENIC HORMONE

That the hypophysis is related in some way to carbohydrate metabolism did not escape either experimenter or clinician and when, in the pioneer ablations of Cushing, adipose dwarfs were created, he was not surprised to detect in them an increased tolerance for carbohydrates, for this stood in his mind in proper contrast to the association of diabetes with acromegaly. However, the whole question of the relation of carbohydrate metabolism to the anterior lobe waited for its secure establishment from the series of researches by Houssay and his colleagues in Buenos Aires, which was ushered in by the Houssay-Magenta³⁸ discovery of the increased sensitivity to insulin shown by hypophysectomized dogs, a fact which has been abundantly confirmed by Geiling³⁹ of Baltimore and by Kobasashi of Tokyo. But the most remarkable disclosure by the Houssay school is perhaps that relating to hypophysectomy as strangely ameliorating diabetes produced by ablation of the pancreas. The complicity of the anterior lobe here seems clearly established by their demonstration that implants of it (not of the pars posterior or intermedia) immediately bring on hyperglycemia in such animals. The detection of just which of the anterior hypophyseal hormones is responsible for the pancreas-pituitary relation would seem possible by study of the potency of various extracts in reinvoking diabetes after the double operation (hypophysectomy and pancreatectomy) or of the capacity of such extracts to control the toxicity of insulin in hypophysectomized animals. Such preliminary work as has been done in the latter field is as yet unsatisfactory.

The Houssay school has shown that morphine and epinephrine hyperglycemias are less in hypophysectomized animals. They have in fact shown that hypophysectomized animals are peculiarly susceptible to hypoglycemias from fasting alone, hypoglycemias that may prove fatal. It is strange that for so long a time these facts were overlooked. Pencharz with us has found the striking picture of hypoglycemic collapse in hypophysectomized guinea-pigs on coming to the laboratory in the morning and has been able to provoke a Lazarus-like resurrection with dextrose by stomach tube or needle.

Though many physicians may take sharp issue here, modern experimental work, as has already been explained, seems to challenge the complicity of the hypophysis itself in conditions that have long been called hypophyseal adiposity. On the one hand, adiposity does not result from discrete injury to the hypophysis or its removal and, on the other hand, we have seen the invariable production of adiposity by slight injury to brain areas adjacent to the gland. It is highly important, then, to inquire as to whether contiguous brain injury in hypophysectomies, be it ever so slight, has not actually been the true cause of the upset in carbohydrate metabolism. Possible nervous origin for such an upset has been known, of course, from the time of Claude Bernard's sugar puncture in 1858, and we know the modern studies of hypothalamic metabolic centers. Nor can sugar upset with pituitary tumors bring any decision here, for a possible encroachment of the neoplasm on these centers is obvious. It would seem of maximal importance, therefore, for us to be

able to say that we have provoked true diabetes in normal dogs, with nervous system of course intact, by the administration of alkaline extracts of the hypophysis.⁴⁰ This experience would seem to possess crucial value in establishing an hypophyseal causation of diabetes by humeral channels, that is, by an overproduction of one of its hormones, diabetogenic in its effect. The method of action of this hormone, its possible repression of the functioning of the Langerhans tissue, is as yet entirely unknown; nor has separation of the diabetogenic hormone from the growth and thyroid or epinephrine-affecting hormones been accomplished. I can only state that our work shows that the gonadotropic hormone is clearly not involved.

AN ADRENALOTROPIC HORMONE

Perhaps the most deeply interesting changes as a result of ablation of the pituitary are those provoked in the adrenal; while the body weight in these dwarfs is much below that of their normal litter mate controls, an even more striking atrophy overtakes the adrenals and this reduction is due almost solely to the atrophy of the cortex of the suprarenal, which becomes little more than a shell.

On account of the well known essentiality of the adrenal cortex for life, it was only natural that we should inquire as to whether the ultimate strange sickness and death of hypophysectomized animals was not due to cessation of adrenal cortical function. Hence it was that we administered Swingle's adrenal cortical hormone to hypophysectomized animals that had begun to decline many months after the operation. This vitally important adrenal substance did not modify their decline, a decline dramatically changed to improvement the moment we gave them aqueous alkaline extracts of the anterior lobe. The sudden resuscitation which one can invariably produce in this way is attended not only with abrupt general body growth but regrowth toward normality of the adrenal cortex. Adrenal cortical tissue therefore needs for its normality some constituent of the anterior hypophysis. Since our prolonged series of experiments has shown that replacement of the adrenal cortex in hypophysectomized animals is never provoked even by concentrated dosage with the gonadotropic hormone⁴¹ and since it is invariably produced by certain extracts of the growth hormone but not by other highly purified ones, it would appear inevitable for us to recognize the existence of an adrenalotropic hormone, the properties of which as distinguished from the thyrotropic, lactogenic and other possible hormones will emerge, I trust, from the research of the three or four laboratories engaged in this study in the course of the next few months. Concentrated preparations of the adrenalotropic hormone should make it possible to provoke more readily the hypertrophy of accessory adrenal tissue after complete excision of these glands. Nor is it altogether out of the question for us to hope that the hypertrophied fragments will more readily undertake normal functioning and that Addison's disease may thus be attacked not by replacement therapy, as is at present the case and is the case with diabetes, but by a new type of therapeutic procedure, one that will stir the defective tissue itself to resume its normal task.

38. Houssay, B. A., and Magenta, M. A.: Sensibilidad en los perros hipofisarios a la insulina. *Rev. Asoc. med. argent.* 37: 236, 1924.

39. Geiling, E. M. K.; Campbell, D., and Ishikawa, Y.: The Effect of Insulin on Hypophysectomized Dogs. *J. Pharmacol. & Exper. Therap.* 31: 247 (July) 1927.

40. Evans, H. M.; Meyer, Karl; Simpson, Miriam E., and Reichert, F. L.: Disturbance of Carbohydrate Metabolism in Normal Dogs Injected with the Hypophyseal Growth Hormone. *Proc. Soc. Exper. Biol. & Med.* 29: 857-858 (April) 1932.

41. Evans, H. M.; Meyer, Karl; Simpson, Miriam E., and others: Growth and Gonad Stimulating Hormones of the Anterior Hypophysis. *Memoirs University of California* 11, to be published.

CONCLUSION

I realize that the bewildered reader of my exposition will desire to be assured of the justification for the recognition of such a perplexing number of apparently discrete internal secretory substances or hormones furnished by a bit of tissue in which at most but three or four distinct cell types have been recognized by modern histologic methods. Pending the time the biologic chemist develops methods for the further concentration and, above all, for the complete isolation of these substances, preferably in crystalline purity, one will desire to know briefly whether or not biologic workers have perfected a methodology adequate for the identification of truly discrete effects. I can only state that fortunately at the present time sufficiently sensitive test objects would appear to have been found for each of the five substances—the growth, gonadotropic, thyrotropic, lactogenic and diabetogenic hormones—and that in many cases, but not yet in all, we have assurances of relative, even if not absolute, freedom from any but a single effect.

One may also challenge the assumption that these various isolated and clear-cut effects are all the direct result each of a peculiar hormone substance acting on a particular end organ. Might not some of them be secondary, that is, indirect, effects of two or three fundamental hormones like those which govern growth and sex?

I am of the opinion that this vitally important criterion will also quickly be met. The effect of the growth hormone is, of course, general. But the effects of the gonadotropic and thyrotropic hormones have been recently shown to be exercised directly on their recipient tissues, for these secretions cause their characteristic effects when they are placed in contact with gonadal or thyroid tissue fragments in the Warburg chamber.

Fortunately the biologic chemist has now joined forces with the biologist or, in the example of Professor Collip, has taken charge of this whole affair, and one will sympathize with the impulse that leads me to the prediction that through the use of some of the most modern tools of biologic chemistry, those for instance that have been so useful in vitamin and, above all, in enzyme research, ultimate identification of these substances will not be long delayed.

Twelve years ago, Cushing⁴² rightly stigmatized behavior which if not outright charlatanism condoned extravagant conceptions of our control of basic phenomena in the body and said, to present an extreme example, "The Lewis Carroll of today would have Alice nibble from a pituitary mushroom in her left hand and a lutein one in her right and presto! she is any height desired."

I have presented you today with giants possessing infantile sexual systems, or young creatures still suckling their mother and yet themselves sexually mature; moreover, with the experimental counterpart of that South American male savage seen by Alexander von Humboldt to be suckling his child. These mysteries, therefore, are at hand. We are not living in a dream but have worked with exactitude and need not cry out, then, for deliverance from the dream, "Alice, where art thou? for it must be you, surely in this queerest of worlds, who hath taken us by the hand."

ACUTE LEUKEMIA IN CHILDREN

JEAN V. COOKE, M.D.

ST. LOUIS

Leukemia may be defined as a systemic disease of unknown etiology in which the normal mechanism for the production of formed blood elements is permanently damaged, with the appearance in the circulating blood of abnormal types of leukocytes. Three common forms of the disease are readily recognized, each of which is a clinical entity with a relatively characteristic blood picture: (1) Chronic myelogenous leukemia, or chronic myeloid leukemia, in which large numbers of granular leukocytes and myelocytes occur in the blood. This is the common form of the disease seen in adults, but is relatively rare in children. It is characterized by a great enlargement of the spleen, muscular weakness and a duration of from one to several years. (2) Chronic lymphoid leukemia, a less frequent type found in older persons and clinically similar to the chronic myelogenous form, but characterized by the presence of very numerous small nongranular mononuclear leukocytes resembling normal lymphocytes. This form of

TABLE 1.—Age and Sex of Fifty Children with Acute Leukemia

| Age, Years | Boys | Girls |
|---------------|------|-------|
| 0 to 1..... | 2 | 1 |
| 1 to 2..... | 0 | 0 |
| 2 to 3..... | 3 | 2 |
| 3 to 4..... | 6 | 1 |
| 4 to 5..... | 0 | 4 |
| 5 to 6..... | 3 | 3 |
| 6 to 7..... | 2 | 0 |
| 7 to 8..... | 2 | 1 |
| 8 to 9..... | 0 | 2 |
| 9 to 10..... | 3 | 0 |
| 10 to 11..... | 4 | 1 |
| 11 to 12..... | 2 | 0 |
| 12 to 13..... | 2 | 1 |
| 13 to 14..... | 2 | 0 |
| 14 to 15..... | 1 | 0 |

the disease is unknown in children. (3) Acute leukemia, or acute lymphoid leukemia, the common or usual form of the disease seen in children. It occurs also in adults, but is less common than the chronic myeloid type. The characteristic blood changes consist in anemia, thrombocytopenia and a relatively high percentage of nongranular abnormal mononuclear cells. The actual number of leukocytes varies from a few thousand to several hundred thousand, and the disease is always fatal in from a few weeks to a few months. Practically all cases of leukemia are easily classified in one of the foregoing groups, although rarely in an atypical case this is difficult.

In this paper is presented an analysis of the clinical manifestations in fifty cases of acute leukemia in children which have been observed in the last fifteen years at the St. Louis Children's Hospital. During this period three cases of typical chronic myelogenous leukemia have also occurred in children, and two other instances of acute blood dyscrasia which were difficult to classify from the blood picture. Two of the three children with chronic leukemia were boys, 8 and 12 years of age, and one a girl of 9 years. The blood picture and clinical symptoms in all the cases were typical of the disease as seen in adults. One child is still under observation ten

42. Cushing, Harvey: Disorders of the Pituitary Gland, Retrospective and Prophetic, J. A. M. A. 76:1721 (June 18) 1921.

From the Department of Pediatrics, Washington University School of Medicine, and the St. Louis Children's Hospital.
Read before the Section on
Session of the American Medical Association,
Fourth Annual
June 14, 1933.

months after the apparent onset, while the other two lived fourteen months and two years, respectively.

Certain general characteristics of the group of fifty children with acute leukemia relating to the age, sex and duration of the disease deserve comment. If the three five year periods in table 1 are compared, it will be seen that there is little apparent difference in the age incidence in boys. A very striking decrease, however,

TABLE 2.—Total Duration of Acute Leukemia in Fifty Children

| Duration | Number of Cases | | Per Cent |
|-----------------------|-----------------|----|----------|
| Birth to 1 month..... | 3 | 27 | 54 |
| 1 to 2 months..... | 7 | | |
| 2 to 3 months..... | 17 | | |
| 3 to 4 months..... | 7 | 17 | 34 |
| 4 to 5 months..... | 6 | | |
| 5 to 6 months..... | 4 | | |
| 6 to 7 months..... | 1 | 6 | 12 |
| 7 to 8 months..... | 1 | | |
| 8 to 9 months..... | 4 | | |

occurs in the incidence of the disease in older girls, since twelve of the eighteen girls with the disease were in the first six years of life and only six were between the ages of 6 and 15 years. In all published reports of acute leukemia, including cases in both children and adults, males have regularly predominated over females in a proportion of 2:1, a figure closely approximated in this series of children (thirty-two boys and eighteen girls), but it is of some interest that the disproportion in sex incidence does not apply to younger children.

The three cases occurring in infancy may be briefly mentioned. In one the disease was congenital, the first symptoms being noted on the fourth day of life; the baby died on the twenty-third day. The onset in the second case was at the age of 10 days, and the baby lived three months. In the third case, the apparent onset was in the third month, and death occurred three months later. All the cases were typical clinically and had characteristic blood pictures.

The total duration of the disease was somewhat difficult to determine since the onset is usually insidious; however, the duration has been tabulated (table 2) as accurately as possible from the first onset of symptoms. More than half the cases were fatal in three months or less. About one third of the patients lived between three and six months, while only six, or one-eighth, lived from six to nine months. As there has been a tendency to speak of the cases of children with agranulocytic leukemia who live longer than a few months as chronic lymphatic leukemia, it is of interest to mention briefly the type of the disease in the six children who lived longer than six months. One was under observation for almost three months with a mediastinal leukemic tumor, but without leukemic blood changes, and lived three months after the leukemic picture developed in the blood. The cases of four of the remaining five children were of the leukopenic type, and there were only transient periods of moderate leukocytosis. Two of the children who were examined at necropsy showed typical leukemic infiltration of the organs. It seems preferable to limit the term chronic lymphatic leukemia to the well recognized type which occurs in adults and to consider that in a small proportion of children with acute leukemia the disease may have a moderately prolonged course.

BLOOD PICTURE

The fifty children with acute leukemia had blood pictures of the type commonly called acute lymphatic leu-

kemia. The granular polymorphonuclear cells formed only from 1 to 15 per cent, and usually less than 10 per cent, of the leukocytes; these cells were in various stages of maturation as the *stabkern* and *jungengliche* cells of Schilling, as well as segmented cells, were always present. Myelocytes were rarely found. The remainder of the cells were mononuclear, nongranular and oxydase negative, and varied in size and in amount of protoplasm. Although these cells are often referred to as lymphocytes or lymphoblasts, there is considerable evidence that they originate in the marrow and are probably myeloblasts. The leukocyte count in the children of this group varied from 250 to 815,000 per cubic millimeter in different patients. Certain patients also had much variation at different times during the disease. For example, a reduction from 200,000 to 5,000 in three days occurred in one child, and in another a decrease from 107,000 to 11,500 four days later. Other somewhat less striking variations occurred without apparent cause. In order to illustrate the variations in the number of circulating leukocytes in this series of fifty children, the highest and the lowest counts while under observation have been tabulated.

It will be seen, for example, that in nineteen children the total count reached 100,000 or more, but in only seven did it remain constantly above that figure, and while nineteen children had counts of less than 10,000 at some time during the disease, in six the leukocytes never went above this figure. Patients with low counts, often referred to as having aleukemic leukemia or leukemia without leukocytosis, showed no clinical differences from those with leukocytosis or hyperleukocytosis, and a considerable proportion of the patients showed leukopenia at some time during the course of the disease.

In addition to the leukocyte changes, all the children had anemia and thrombocytopenia. About three fourths of them had well marked anemia when first seen. Only rarely were normoblasts present, and there appeared little tendency to erythropoiesis. Twenty-three of the forty-three children who were under observation during the later stage of the disease had red counts of less than 2,000,000, two counts being less than 1,000,000; fifteen had counts between 2,000,000 and 3,000,000, and in five the count was between 3,000,000 and 4,000,000.

One group of children of particular interest included five who were under observation for varying periods after the onset of symptoms which were probably of leukemic origin, but before any leukemic change could

TABLE 3.—Leukocyte Counts

| | More Than 100,000 | 50,000 to 100,000 | 20,000 to 50,000 | 10,000 to 20,000 | Less Than 10,000 |
|--------------------|----------------------|----------------------|---------------------|---------------------|---------------------|
| Highest count..... | 19 | 6 | 13 | 6 | 6 |
| Lowest count..... | 7 | 7 | 10 | 7 | 19 |

be detected in the blood. Four of them had mediastinal masses of sufficient size to give dyspneic symptoms one month, six weeks, two months and three months, respectively, before the development of leukemic blood changes, while the fifth child had fever and very severe rheumatoid pains for six weeks previously. During this period none of the children had anemia or thrombocytopenia.

The characteristics of the blood picture in acute leukemia, therefore, were: (1) agranulocytosis with the presence of immature polymorphonuclear cells, (2)

anemia of the aplastic type, (3) thrombocytopenia and (4) the appearance of varying numbers of abnormal nongranular mononuclear cells.

The possible influence of preceding infection on the production of acute leukemia has interested many investigators. In only a few of the children in this series had a recent infection been noted. In thirty-seven no infection had occurred within six months preceding the leukemia; one had pertussis and bronchopneumonia five months before, one chicken-pox four months before and two scarlet fever two months previously. Of the nine who had infection within one month of the apparent onset of the disease, three had follicular tonsillitis, two infection of the upper respiratory tract, two impetigo, one measles and one diphtheria.

THE CLINICAL SYMPTOMS

The first symptom of the disease noted by the parents is of interest. This symptom consisted in pallor and asthenia in seventeen cases; enlargement of the cervical gland in nine, skin hemorrhages in seven, cough and dyspnea in five, rheumatoid pains in five, stomatitis in two, abdominal pain in two, neurologic symptoms

he had no objective swelling of the extremities, there was general muscular tenderness on moderate pressure. Physical examination gave negative findings except for palpable small anterior and posterior cervical lymph nodes. At times he would awaken from a short sleep crying and moaning with pain in the muscles, especially in the legs. A pea-sized rheumatism-like nodule was noted at the proximal end of the right metacarpal bone, and clusters of similar nodules were found in the occipital aponeurosis. A faint systolic murmur developed at the apex, although an electrocardiogram showed a normal mechanism, and no cardiac abnormality was detected. Fever and pain persisted. There was no anemia, and the blood showed a moderate leukopenia of from 4,000 to 6,000 with a normal differential count. The child was considered to have rheumatic fever until more than three weeks after admission, when hemorrhages occurred in the skin and mucous membranes, the cervical glands became enlarged, and the leukocytes increased to 20,000 with the picture of acute leukemia. Death occurred one week later.

4. *Hemorrhages*.—Although petechial or ecchymotic hemorrhages, as well as bleeding from mucous membranes, are relatively common in acute leukemia, in certain children this hemorrhagic tendency overshadows other symptoms by its extent. The patients in this

TABLE 4.—Principal Clinical Manifestations in Fifty Children with Acute Leukemia

| Clinical Type | Number | Rheumatoid Pain | Stomatitis | Deafness | Cervical Lymph Nodes | | Hemorrhages | | Spleen | | |
|---------------------------|--------|-----------------|------------|----------|----------------------|---------|-------------|------------------|--------|----|-----|
| | | | | | Palpable | Visible | Skin | Mucous Membranes | + | ++ | +++ |
| Asthenia..... | 22 | 6 | 1 | .. | 14 | 5 | 14 | 12 | 7 | 13 | 2 |
| Dyspnea..... | 7 | .. | .. | 1 | 3 | 4 | 5 | 2 | 1 | 4 | 2 |
| Cough..... | 6 | 6 | 1 | 1 | 4 | 1 | 4 | 4 | 2 | 1 | 3 |
| Abdominal pain..... | 5 | 1 | .. | .. | 3 | 1 | 5 | 4 | 1 | 2 | 2 |
| Stomatitis..... | 4 | .. | .. | .. | .. | 4 | 3 | 3 | 2 | 1 | 1 |
| Neurologic symptoms..... | 2 | .. | .. | 1 | .. | 2 | 2 | 2 | 1 | .. | 1 |
| Stomatitis..... | 2 | .. | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .. |
| Neuropathic symptoms..... | 2 | .. | .. | .. | 2 | .. | 1 | .. | .. | 1 | 1 |
| Totals..... | 50 | 13 | 4 | 4 | 27 | 13 | 35 | 23 | 15 | 23 | 12 |

(paralysis of the bladder and severe headache) in two and enlargement of the abdomen in one.

For purposes of description of the clinical manifestations the children have been divided into several groups on the basis of the most prominent or striking clinical phenomena of the disease, although there was, of course, some overlapping of the symptoms and signs. These groups are as follows:

1. *Asthenia*.—This familiar type included twenty-two children in whom the principal symptoms were weakness and pallor.

2. *Dyspnea*.—In this type the symptoms are due to pressure of a leukemic tumor in the anterior mediastinum. The cases of the seven children in this group have been described in detail elsewhere,¹ and it will be mentioned only that the symptoms consisted in cyanosis of the neck and face, with cough and dyspnea which tended to be paroxysmal and were often accentuated by muscular effort.

3. *Rheumatoid Pains*.—Pain in the extremities and in the joints is often a prominent symptom of acute leukemia and is not always sufficiently emphasized. A brief summary of one of the cases in this group follows:

A 14 year old white boy, two days after having had slight fever and sore throat complained of pain in the elbows, knees and ankles, which continued and became so severe that walking was painful. On examination two weeks after the onset the boy had a fever of 40.4 C. (104.7 F.) and was apparently suffering from severe pain in the knees and head. Although

group had extensive bleeding in the skin and also from the mucous membranes (the nose, mouth, intestine or urinary tract).

5. *Cervical Adenopathy*.—Marked enlargement of the cervical lymph nodes was quite inconstant, but in a certain number of cases formed the most striking clinical manifestation.

6. *Abdominal Pain*.—In two instances symptoms of acute peritoneal irritation dominated the illness, with very severe abdominal pain, muscular spasm and vomiting. At necropsy, one child had a perforated appendix, the wall being very friable from extensive leukemic infiltration, while the second child had widespread subserous hemorrhages over the appendix, cecum, transverse colon and sigmoid. Both had great enlargement of the abdominal lymph nodes. Four other children suffered from somewhat less severe abdominal symptoms.

7. *Stomatitis*.—Ulcerative stomatitis associated with Vincent's fasospirolosis was relatively infrequent, being noted in only four children. In two it was quite severe, one case developing into noma of the cheek.

8. *Neuropathic Symptoms*.—In two patients the chief symptoms were referable to the nervous system. One was a 13 year old boy in whom, during the course of a week, signs of transverse myelitis developed, with complete flaccid paralysis of the legs and urinary and fecal incontinence. There were at this time no other signs of leukemia, and only an examination of the blood revealed the diagnosis. He died two months later. There was no necropsy, but it seemed likely that a leukemic infiltration in or pressing on the spinal cord pro-

1. Cooke, J. V.: Mediastinal Tumor in Acute Leukemia, *Am. J. Dis. Child.* 44: 1153 (Dec.) 1932.

duced the symptoms. The second child, a 10 year old boy, was ill less than three weeks. He complained constantly of very severe frontal headache, pain and hyperesthesia and paresthesia of the legs. A few days before death he became lethargic and completely disoriented when aroused, although he had only slight fever and had not seemed toxic. In addition to a leukocyte count of over 500,000, he had enlargement of the spleen and the liver, a few petechiae of the skin and some small hemorrhages in the ocular fundi. The encephalitic symptoms were attributed to cerebral leukemic infiltration. Four other children had varying degrees of deafness; one became practically deaf toward the end of the disease, and the other three were only partially so.

Certain of the more common clinical manifestations tabulated in table 4 may be commented on briefly. Enlargement of the cervical lymph nodes was present to a sufficient degree to render them visible in only eighteen children; in twenty-seven others they were palpable and were considered to be slightly enlarged, and in five they were normal. The axillary and inguinal nodes were often slightly larger than normal and firm, but were never greatly increased in size. The spleen was firm and swollen in every case. In only twelve instances did it reach the umbilicus, while in fifteen the organ was felt only 1 or 2 fingerbreadths below the costal margin, and in the remaining twenty-three the size was between that in the foregoing groups. Hemorrhages were observed in forty of the fifty children and were somewhat more common in the skin (thirty-five) than in the mucous membranes (twenty-eight). While hemorrhage was apparently related to the thrombocytopenia, certain children had very low platelet counts without any visible bleeding.

Fever was present at some time in all children. In many it was only around 38 C. (100.4 F.), but almost all had periods, often toward the end of the disease, during which there was striking clinical evidence of general systemic disturbance with pyrexia. These periods were apparently not due to intercurrent infection but were attributable to the disease itself. A certain number of children suffered from intercurrent acute infections, such as tonsillitis, otitis and mastoiditis, during the course of the acute leukemia. On account of the lack of granular leukocytes in the blood, it was feared that the power of resistance in such children would be low. It was therefore surprising that several patients recovered from such infection quite satisfactorily; one lived more than a month after mastoidectomy, while another recovered from a streptococcal infection of the ear and septicemia; in this case blood cultures were positive on two occasions. Certain others, however, died of terminal pneumonia. Many seemed to succumb to the effects of the leukemia without demonstrable infection.

The effects of blood transfusion varied greatly in different children. In some definite improvement continued for a week or more after transfusion, and it could be repeated several times, while in others few effects could be noted. The tendency to continued severe hemorrhage was often counteracted temporarily by transfusion. In general, however, the transient effect and the certain eventual outcome of the disease made the use of transfusions of questionable value. They produced no change in the leukocyte picture, not even a temporary increase in granular cells. The few children with leukemia treated by roentgen irradiation did not improve, and certain of them seemed more toxic after such treatment and died in a short time. The

impression gained was that irradiation is contraindicated. In only one group was such irradiation of value, viz., in children who had massive mediastinal infiltration producing compression of the trachea and vessels with dyspnea. In this group irradiation produced an almost immediate disappearance of the mediastinal tumor and of the compression symptoms in the patients in whom leukemic blood changes had not yet appeared, although the leukemic blood picture developed from a few weeks to several months later. On the other hand, in children in whom irradiation was employed after the characteristic blood picture was present, it was without benefit. The opinion has been expressed that such patients with mediastinal tumors but without leukemic blood changes really have mediastinal lymphosarcoma which was transformed into leukemia by the irradiation. This seems quite unlikely: (1) because of the large number of instances of massive mediastinal infiltration in which acute leukemia develops without irradiation, (2) because many patients with mediastinal or other lymphosarcomas receive irradiation without the later appearance of leukemic changes and (3) because other patients, the case of one of whom is cited in this paper, are ill for more than a month with symptoms referable to the leukemic state but without leukemic blood, but in whom a leukemic blood picture develops without previous irradiation.

ABSTRACT OF DISCUSSION

Dr. F. C. RODDA, Minneapolis: Dr. Cooke's careful study and analysis of fifty cases of acute lymphatic leukemia is very instructive. A well developed case may be readily recognized, but as to the onset this is not so. I have in mind two instances in which colleagues with operative proclivities removed the tonsils and adenoids shortly after the onset of leukemia. One survived for a short period, and the other died promptly from hemorrhage. Infiltration of various parts of the body may be easily recognized and, again, easily overlooked. An increase in the size of the spleen is expected. The infiltration of the mediastinum, from the resultant dyspnea and striking demonstration from the roentgenogram, is readily recognized. It is not as well known, however, that infiltrations may involve such other organs as the liver and the kidneys. Formerly it was taught that an acute lymphatic leukemia would always be accompanied by a high white count. As Dr. Cooke has shown, this is not necessarily true. While the differential count is tremendously important at times, it may be very hard to be sure of the diagnosis. It is sometimes not possible to say that a particular type of cell found in the blood is absolutely indicative of an acute leukemia. Then one is thrown back on the history, the physical examination, the blood examination and the clinical course of the disease, which Dr. Cooke has so well outlined.

Pseudo-Ivory and True Ivory.—A chemical analysis of true ivory shows that its composition is similar to that of human bone, both differing only in the amount of magnesium phosphate and calcium carbonate they contain. Ivory contains about 43 per cent organic matter, while dentin contains only 25 per cent. Ivory substance has the tensile strength essential to the permanency of shape and is of a morphologic structure similar to that of bone without showing any tendency toward absorption. Its chemical and morphologic similarity to human bone explains why it is a nonirritant to the tissues. Clinically, it has been proved in my experience for the last twelve years that ivory remains in the tissues if introduced aseptically and in proper shape. This also has been proved in cases in which ivory has been found unchanged in human structures for thirty years. . . . Strict differentiation of true ivory from the so-called pseudo-ivories is essential, as their behavior in the tissues depends on their composition.—Maliniak, J. W.: Cartilage and Ivory, *Arch. Otolaryng.* 17:649 (May) 1933.

anemia of the aplastic type, (3) thrombocytopenia and (4) the appearance of varying numbers of abnormal nongranular mononuclear cells.

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| | | | | | Palpable | Visible | Skin | Mucous Membranes | + | ++ | +++ |
| Asthenia..... | 22 | 6 | 1 | .. | 14 | 5 | 14 | 12 | 7 | 13 | 2 |
| Dyspnea..... | 7 | .. | .. | 1 | 3 | 4 | 5 | 2 | 1 | 4 | .. |
| Enlargement of cervical glands..... | 6 | 6 | 1 | 1 | 4 | 1 | 4 | 4 | 2 | 1 | .. |
| Enlargement of axillary glands..... | 5 | 1 | .. | .. | 3 | 1 | 5 | 4 | 1 | 2 | .. |
| Enlargement of inguinal glands..... | 4 | .. | .. | .. | .. | 4 | 3 | 3 | 2 | 1 | 1 |
| Abdominal pain..... | 2 | .. | .. | 1 | .. | 2 | 2 | 2 | 1 | .. | .. |
| Stomatitis..... | 2 | .. | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .. |
| Neuropathic symptoms..... | 2 | .. | .. | .. | 2 | .. | 1 | .. | .. | 1 | 1 |
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group had extensive bleeding in the skin and also from the mucous membranes (the nose, mouth, intestine or urinary tract).

5. *Cervical Adenopathy*.—Marked enlargement of the cervical lymph nodes was quite inconstant, but in a certain number of cases formed the most striking clinical manifestation.

6. *Abdominal Pain*.—In two instances symptoms of acute peritoneal irritation dominated the illness, with very severe abdominal pain, muscular spasm and vomiting. At necropsy, one child had a perforated appendix, the wall being very friable from extensive leukemic infiltration, while the second child had widespread subserous hemorrhages over the appendix, cecum, transverse colon and sigmoid. Both had great enlargement of the abdominal lymph nodes. Four other children suffered from somewhat less severe abdominal symptoms.

7. *Stomatitis*.—Ulcerative stomatitis associated with Vincent's *fasospirillosis* was relatively infrequent, being noted in only four children. In two it was quite severe, one case developing into noma of the cheek.

8. *Neuropathic Symptoms*.—In two patients the chief symptoms were referable to the nervous system. One was a 13 year old boy in whom, during the course of a week, signs of transverse myelitis developed, with complete flaccid paralysis of the legs and urinary and fecal incontinence. There were at this time no other signs of leukemia, and only an examination of the blood revealed the diagnosis. He died two months later. There was no necropsy, but it seemed likely that a leukemic infiltration in or pressing on the spinal cord pro-

1. Cooke, J. V.: Mediastinal Tumor in Acute Leukemia, *Am. J. Dis. Child.* 44: 1153 (Dec.) 1932.

duced the symptoms. The second child, a 10 year old boy, was ill less than three weeks. He complained constantly of very severe frontal headache, pain and hyperesthesia and paresthesia of the legs. A few days before death he became lethargic and completely disoriented when aroused, although he had only slight fever and had not seemed toxic. In addition to a leukocyte count of over 500,000, he had enlargement of the spleen and the liver, a few petechiae of the skin and some small hemorrhages in the ocular fundi. The encephalitic symptoms were attributed to cerebral leukemic infiltration. Four other children had varying degrees of deafness; one became practically deaf toward the end of the disease, and the other three were only partially so.

Certain of the more common clinical manifestations tabulated in table 4 may be commented on briefly. Enlargement of the cervical lymph nodes was present to a sufficient degree to render them visible in only eighteen children; in twenty-seven others they were palpable and were considered to be slightly enlarged, and in five they were normal. The axillary and inguinal nodes were often slightly larger than normal and firm, but were never greatly increased in size. The spleen was firm and swollen in every case. In only twelve instances did it reach the umbilicus, while in fifteen the organ was felt only 1 or 2 fingerbreadths below the costal margin, and in the remaining twenty-three the size was between that in the foregoing groups. Hemorrhages were observed in forty of the fifty children and were somewhat more common in the skin (thirty-five) than in the mucous membranes (twenty-eight). While hemorrhage was apparently related to the thrombocytopenia, certain children had very low platelet counts without any visible bleeding.

Fever was present at some time in all children. In many it was only around 38 C. (100.4 F.), but almost all had periods, often toward the end of the disease, during which there was striking clinical evidence of general systemic disturbance with pyrexia. These periods were apparently not due to intercurrent infection but were attributable to the disease itself. A certain number of children suffered from intercurrent acute infections, such as tonsillitis, otitis and mastoiditis, during the course of the acute leukemia. On account of the lack of granular leukocytes in the blood, it was feared that the power of resistance in such children would be low. It was therefore surprising that several patients recovered from such infection quite satisfactorily; one lived more than a month after mastoidectomy, while another recovered from a streptococcal infection of the ear and septicemia; in this case blood cultures were positive on two occasions. Certain others, however, died of terminal pneumonia. Many seemed to succumb to the effects of the leukemia without demonstrable infection.

The effects of blood transfusion varied greatly in different children. In some definite improvement continued for a week or more after transfusion, and it could be repeated several times, while in others few effects could be noted. The tendency to continued severe hemorrhage was often counteracted temporarily by transfusion. In general, however, the transient effect and the certain eventual outcome of the disease made the use of transfusions of questionable value. They produced no change in the leukocyte picture, not even a temporary increase in granular cells. The few children with leukemia treated by roentgen irradiation did not improve, and certain of them seemed more toxic after such treatment and died in a short time. The

impression gained was that irradiation is contraindicated. In only one group was such irradiation of value, viz., in children who had massive mediastinal infiltration producing compression of the trachea and vessels with dyspnea. In this group irradiation produced an almost immediate disappearance of the mediastinal tumor and of the compression symptoms in the patients in whom leukemic blood changes had not yet appeared, although the leukemic blood picture developed from a few weeks to several months later. On the other hand, in children in whom irradiation was employed after the characteristic blood picture was present, it was without benefit. The opinion has been expressed that such patients with mediastinal tumors but without leukemic blood changes really have mediastinal lymphosarcoma which was transformed into leukemia by the irradiation. This seems quite unlikely: (1) because of the large number of instances of massive mediastinal infiltration in which acute leukemia develops without irradiation, (2) because many patients with mediastinal or other lymphosarcomas receive irradiation without the later appearance of leukemic changes and (3) because other patients, the case of one of whom is cited in this paper, are ill for more than a month with symptoms referable to the leukemic state but without leukemic blood, but in whom a leukemic blood picture develops without previous irradiation.

ABSTRACT OF DISCUSSION

DR. F. C. RODDA, Minneapolis: Dr. Cooke's careful study and analysis of fifty cases of acute lymphatic leukemia is very instructive. A well developed case may be readily recognized, but as to the onset this is not so. I have in mind two instances in which colleagues with operative proclivities removed the tonsils and adenoids shortly after the onset of leukemia. One survived for a short period, and the other died promptly from hemorrhage. Infiltration of various parts of the body may be easily recognized and, again, easily overlooked. An increase in the size of the spleen is expected. The infiltration of the mediastinum, from the resultant dyspnea and striking demonstration from the roentgenogram, is readily recognized. It is not as well known, however, that infiltrations may involve such other organs as the liver and the kidneys. Formerly it was taught that an acute lymphatic leukemia would always be accompanied by a high white count. As Dr. Cooke has shown, this is not necessarily true. While the differential count is tremendously important at times, it may be very hard to be sure of the diagnosis. It is sometimes not possible to say that a particular type of cell found in the blood is absolutely indicative of an acute leukemia. Then one is thrown back on the history, the physical examination, the blood examination and the clinical course of the disease, which Dr. Cooke has so well outlined.

Pseudo-Ivory and True Ivory.—A chemical analysis of true ivory shows that its composition is similar to that of human bone, both differing only in the amount of magnesium phosphate and calcium carbonate they contain. Ivory contains about 43 per cent organic matter, while dentin contains only 25 per cent. Ivory substance has the tensile strength essential to the permanency of shape and is of a morphologic structure similar to that of bone without showing any tendency toward absorption. Its chemical and morphologic similarity to human bone explains why it is a nonirritant to the tissues. Clinically, it has been proved in my experience for the last twelve years that ivory remains in the tissues if introduced aseptically and in proper shape. This also has been proved in cases in which ivory has been found unchanged in human structures for thirty years. . . . Strict differentiation of true ivory from the so-called pseudo-ivories is essential, as their behavior in the tissues depends on their composition.—Maliniak, J. W.: Cartilage and Ivory, *Arch. Otolaryng.* 17:649 (May) 1933.

THE SYSTOLIC MURMUR

ITS CLINICAL SIGNIFICANCE

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The physical causes or mechanism of the systolic murmur and its clinical significance have been matters of much discussion for many years. There was a time, not so very long ago, when on hearing a systolic murmur over the heart, even in the absence of any other important abnormalities, the physician would pronounce the ominous verdict that the patient was suffering from organic heart disease with mitral insufficiency. He would also imply in this diagnosis a serious prognosis and institute restrictions in the mode of life for his patient. More recently, systolic murmurs have been found so often to be benign that an entirely opposite point of view has developed. It has become the teaching in many localities that "systolic murmurs have no significance whatever," that "organic mitral insufficiency does not exist except with mitral stenosis" and even that "auscultation is of no great importance," for it is not the valvular but the myocardial state that determines the efficiency of the circulation. The extreme position in this controversy is indicated in a remark that Sir James Mackenzie frequently made: that "the stethoscope should be thrown away and the physician should learn how to elicit the early symptoms of heart failure." It is not my purpose in this paper to analyze the physical factors that produce a systolic murmur but to indicate how its presence should be regarded from a clinical point of view, when it should be considered important, and when it may be viewed lightly. It will also be made clear that a proper understanding of the systolic murmur may at times serve as the starting point of the correct diagnosis in cases that otherwise are misinterpreted.

At the outset it is necessary to define the systolic murmur, so that there may be no misunderstanding concerning terms. The term should be limited to a bruit that has an appreciable duration, lasting for a considerable interval of time between the first and second heart sounds. It must have a significant duration entirely apart from its intensity. Frequently systolic murmurs are supposed to be present when on careful auscultation one merely hears a slightly prolonged first heart sound and a perfectly clear and silent interval between the first and second sounds. Because systolic murmurs are regarded as insignificant, physicians, hospital interns and medical students frequently state that they hear such a faint murmur, knowing that no great attention will be paid to it and fearing that some one else might hear one if they did not. Repeatedly after the most careful auscultation I have failed to find any systolic murmur whatever when others have said they had heard one. The first requisite, therefore, is that the bruit must have an appreciable duration after the first heart sound and last into systole.

A second necessary prerequisite in this discussion is that the intensity of the systolic murmur must be estimated. We all indicate the amount of albuminuria or glycosuria in quantitative terms. A slightest possible trace of albumin in the urine has a different meaning than a very large trace. The former would be very

rare during the height of so-called nephrosis, and the latter would be rare during the febrile course of a simple pneumonia. Likewise, the intensity of the Wassermann reaction, the presence of globulin in the spinal fluid, and many other conditions are customarily indicated by terms such as +, ++, +++, +++++. Similarly, for some years I have expressed the intensity of the systolic murmur in six gradations. Grade 1 is the faintest bruit that can be heard on careful auscultation. Although faint, it must have a definite duration into systole. This can be called a slightest possible murmur. Such murmurs are frequently overlooked in general practice. A murmur of grade 6 intensity is extremely rare and may be applied to the few instances in which the murmur can be heard with the naked ear held even at some distance from the chest wall. This one may be called the loudest possible murmur. Murmurs of grades 2 to 5 are intermediate and may be designated slight murmur, moderate murmur, loud murmur, and very loud murmur. It is remarkable that with a very little experience independent observers will designate the same murmur with practically identical terms. Physicians who have worked with me for a short time will differ by no more than one gradation, and in the majority of instances there has been absolute agreement. This has been gone into in some detail, because I believe that without such a nomenclature there will be only confusion and no progress in the clinical interpretation of systolic murmurs.

It is current knowledge that systolic murmurs occur in the presence of organic valvular disease and in congenital and other types of heart disease. It is also known that they are present under conditions in which the heart is not diseased. If there is regurgitation of blood through the mitral valve, there will be a systolic murmur at the apex of the heart. The experimental production of mitral insufficiency in animals results in a systolic murmur, and clinical conditions in which all the evidence points to a regurgitation of blood through the mitral valve also show apical systolic murmurs. The presence of mitral insufficiency and a systolic murmur, however, does not necessarily indicate disease of the mitral valve. The valve may be incompetent but not diseased. Patients with hypertensive, syphilitic or myocardial disease of any sort may have a sufficiently dilated left ventricle so that the mitral orifice is increased in size, and normal valve leaflets may be incompetent and fail to prevent reflux of blood with systole. On the other hand, there will be a systolic murmur from mitral insufficiency without any appreciable dilatation of the left ventricle if the valve itself is diseased and the leaflets are retracted. The former condition one may call relative or functional and the latter, organic mitral insufficiency. It does not follow that the patient with relative mitral insufficiency has a less serious condition than the one with organic. In fact, the contrary is often the case, because the underlying organic disease of the heart muscle is the more important consideration. It is only when there is no important disease at all and a systolic murmur is present that it can truly be called benign or insignificant.

When a systolic murmur is heard and its intensity has been gaged, further evidence of organic cardiovascular disease must be sought. It is sound practice to assume that there is cardiac disease if the heart is found to be enlarged and except for very rare instances when a diastolic murmur is also present. If there are indications that the patient is having or has had a rheu-

matic infection, it is likely that the systolic murmur indicates a structural or organic defect of the valve. But it must be borne in mind that a large proportion of patients who have gone through a rheumatic infection are not aware of it. A systolic murmur in a young person, therefore, is often an important and sometimes the only clue that the patient is rheumatic.

When a patient with a systolic murmur shows no other obvious evidence of cardiac disease, what other factors must be considered that may be related to the production of this murmur? The important ones are hypertension, anemia, hyperthyroidism, fever and increased heart rate. Although these conditions are by no means invariably associated with a systolic murmur, an extensive experience teaches that in some way they are often related to the presence of the murmur and that the murmur may disappear as these factors are controlled. How the systolic murmur develops under such a variety of conditions is not clearly understood. There is one mechanism that deserves more consideration than it has obtained: the speed of blood flow. In hyperthyroidism, fever, and marked anemia, and after or during physical effort, the speed with which the blood stream is ejected from the heart and travels through the circulation is increased. A snapping character of cardiac systole is common to all these conditions and it may be that this snap and rapid ejection of blood may produce the bruit which disappears as the heart quiets down. In the past, such murmurs were often ascribed to relative dilatation of the mitral valve or to changes in the blood itself. Directly after a brisk effort in normal persons there is practically invariably a systolic murmur that develops temporarily at a time when the heart is not dilated, when the sounds are hyperactive, and when the velocity of blood flow is increased. This mechanism probably explains many systolic murmurs in otherwise normal hearts and possibly in some diseased hearts.

It may now be asked how often systolic murmurs are encountered in general practice or in so-called normal individuals. In a recent study,¹ 1,000 cases were carefully examined with this in mind. The relative frequency and intensity of the murmur at the apex and base of the heart, whether it was louder with the patient upright or recumbent, and its occurrence in the two sexes were analyzed. The cases were chosen from the wards of a children's hospital, the surgical wards of the Peter Bent Brigham Hospital, a tuberculosis sanatorium, and among normal nurses and physicians. Only a small number of medical ward cases were included, so that there would not be many patients with primary organic heart disease. The distribution was about equal between the two sexes. Many normal and all sorts of abnormal conditions were included. There were seventeen instances in which a systolic murmur of grade 3 intensity or louder was heard. In every one of these cases, obvious cardiovascular disease was present. In most instances the cardiac condition was an incidental finding during the course of some other illness, such as fracture of the femur or herniotomy. This strongly emphasized the importance of estimating the intensity of the murmurs, for the louder ones were invariably associated with some form of organic heart disease.

There were 196 patients (19.6 per cent) out of the 1,000 examined in whom a murmur of grades 1 or 2 was heard. When the cases were carefully analyzed to eliminate all possible contributing factors such as

obvious heart disease, a past history of rheumatic fever, hypertension, anemia, hyperthyroidism and fever, there remained only forty-five patients, or 4.5 per cent, who had a systolic murmur, and in thirty-four cases the intensity of the murmur was grade 1. The important point was that frequently when a murmur was present an investigation of all the data elicited a reasonable or possible clinical explanation of it. One must not infer that, even when an explanation was found, the condition was to be regarded as serious. In fact, most of these patients were well and probably will continue so for many years. Some, however, probably will later develop hypertension or rheumatic valve disease or subacute bacterial endocarditis, although it is not possible to predict what will happen in any individual case.

It has become the custom among many physicians, especially those examining for insurance companies and civil service commissions, to auscult the heart before and after effort and to draw certain inferences from the finding of a systolic murmur brought out in this way. In a study of ten normal medical house officers it was found that in nine a systolic murmur of grade 1 or 2 intensity developed after a brisk effort, which was not present before. Its appearance can therefore be regarded as a normal phenomenon under these circumstances.

To illustrate the application and value of the point of view expressed, in relation to a systolic murmur, a few experiences will be cited. During the routine examination of forty first-year students at the Harvard Medical School sometime ago, I found only one with a systolic murmur. The intensity of the murmur was grade 2. The young man was well and had practically no complaints. The murmur could not be dismissed and on closer scrutiny a few suspicious evidences of hyperthyroidism were detected. The basal metabolism was then found to be elevated and he was subsequently treated for hyperthyroidism. Here the systolic murmur was the first clue to the proper diagnosis of hyperthyroidism. Although the systolic murmur here might be regarded as benign and certainly did not indicate any organic disease of the valves or the heart itself, it did require interpretation.

A second patient came into the hospital with a diagnosis of left renal stone. He had been working when a pain in the left loin, radiating down to the groin, suddenly developed. Following this, he passed bloody urine. This was confirmed on urinary examination and the case was demonstrated in the hospital as one of renal colic. I found that he had an apical systolic murmur of grade 2 intensity, which led to a more direct questioning concerning his health. He had not been in his usual health for a month before this acute pain occurred and admitted that he had had a heart murmur for many years, since an attack of rheumatic fever. The provisional diagnosis of subacute bacterial endocarditis with renal embolus was made, which thereby explained the presence of the murmur. A blood culture taken that day, although the temperature was only 99.2 F., showed *Streptococcus viridans*. This also illustrates the importance of the consideration of a systolic murmur in diagnosis.

The development of subacute bacterial endocarditis in patients who have had a "benign" and symptomless systolic murmur is by no means rare. I have repeatedly seen this occur, and it emphasizes the fact that, although these systolic murmurs were not accompanied by any impairment in the efficiency of the circulation, they must have indicated some minor irregularity in the

1. Freeman, A. R., and Levine, S. A.: *Ann. Int. Med.*, to be published.

integrity of the mitral valve on which a subsequent bacterial endocarditis developed.

There is a further group of patients in whom a so-called benign systolic murmur subsequently developed into an organic condition. Reference is made to those cases that years later show definite evidence of mitral or aortic stenosis. I have repeatedly seen patients who had a systolic murmur at the apex or base of the heart and gave no other objective or subjective evidence of heart disease. In some, a past history of rheumatic infection could be elicited, and in others it was absent. In the course of some years, definite evidence of stenosis of the mitral valve or the aortic valve occurred. The follow-up study of these murmurs showed that, although originally unassociated with any impairment of the circulation, they were organic and not benign.

Systolic murmurs unaccompanied by other significant evidence of heart disease occur not infrequently in so-called nervous hearts or neurocirculatory asthenia. They are then apt to be faint, not greater than of grade 2 intensity and generally of grade 1 intensity. They are also seen in patients with vasomotor instability and hyperactive hearts. Such patients often show blood pressure readings in the upper limits of normal and not infrequently develop real hypertension later. This is by no means invariable, for some individuals carry a slight systolic murmur for a great many years and die of old age without ever having any embarrassment from their hearts.

It follows from these considerations that a systolic murmur will have greater significance if the heart rate is slow, when there is no fever, anemia or hyperthyroidism, and when the blood pressure is low. If present in the absence of such circumstances a systolic murmur of grade 2 intensity will probably be found to be due to some organic changes in the heart. That does not mean that the patient should be restricted in his activities if there is no other reason for protecting the heart. He may even carry on quite normally and indefinitely, but there is some likelihood of heart disease such as mitral or aortic stenosis, hypertension, or bacterial endocarditis developing further. Systolic murmurs of the faintest intensity (grade 1) are not very rare and occur in a sufficient number of persons who are otherwise normal that their diagnostic value is extremely slight, although they also are found associated with organic disease.

CONCLUSION

Systolic murmurs do occur but are not common in normal individuals. The louder ones are always associated with some form of cardiovascular disease. All systolic murmurs deserve consideration. Many such murmurs, although frequently regarded as "benign" because the individuals feel well and have no symptoms of cardiac insufficiency, are due to organic changes or indicate potentialities for the subsequent development of stenosis of the mitral or aortic valves, hypertension and subacute bacterial endocarditis. Others are truly benign in the sense that no deleterious effects result, even after an indefinite period.

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ABSTRACT OF DISCUSSION

DR. JAMES B. HERRICK, Chicago: It seems to me that our fathers in physical diagnosis, when they wrote the chapter on the diagnosis of heart disease, put in the systolic murmur to make it more difficult; but it is there and I do not think we are justified in eliminating it. It is our duty to interpret it,

even though there are difficulties and dangers of misinterpretation. I agree with Dr. Levine that we should take what might be called a middle course. He has referred to the fact that the murmur may call attention to the existence of something other than heart disease, perhaps anemia or hyperthyroidism. There are two conditions in the heart itself that may be betrayed early by the systolic murmur: a rheumatic heart and a beginning sclerotic change in the valves. We should not be compelled, even though the textbooks tell us so, to defer our opinion concerning every systolic murmur until the heart is large, the second sound accentuated, the patient cyanotic or with râles in the chest. The early recognition through this murmur of remote dangers may enable us to advise the patient how he should live and thus postpone the day of evil. I have practiced medicine long enough to see a crop of these systolic murmurs that I recognized ten, twenty and thirty years ago come to fruit, sometimes with the same murmur that the patients had, and in as good health, but many times with broken down hearts of one type or another. In the war, much emphasis was laid by the medical department on the innocuousness of the systolic murmur. I know from observation that there were tragedies that followed the prescription of some individuals. Back in the fifties, men like Bamberger and our own Austin Flint spoke of the inorganic murmur, the hemic murmur and the accidental murmur. Mackenzie was by no means the first one to emphasize the fact that misrepresentation of the murmur was often made, and with calamitous results. I wish to endorse Mackenzie's emphatic disapproval of the treatment of a murmur in the treatment of a heart merely because it has a murmur. Many of these heart murmurs are in patients who need no digitalis, who need no rest. Some of them need not even be told that they have a murmur. In the other case, a word of caution without undue alarming of the patient is entirely in order.

DR. FRED M. SMITH, Iowa City: The systolic apical murmur occupies an unusual position in cardiac diagnosis. The mere fact that it is so common and so often not indicative of organic disease leads to many mistaken diagnosis. The organic systolic murmur gives information with reference both to the endocardium and to the myocardium, and in each it is frequently among the earliest and most conspicuous signs of structural change. The murmur that occurs during the early stage of a rheumatic infection is for the most part dependent on the dilatation of the auriculoventricular ring. If the patient is seen at a later stage, the systolic murmur may again be the most noteworthy observation and again probably largely responsible for the diagnosis. Then, too, as pointed out by Dr. Levine, the systolic murmur may be the first to suggest the possibility of a subacute bacterial endocarditis or lead to the diagnosis of a thyrotoxicosis. Finally, in the degenerative form of heart disease the systolic murmur over the apex is taken into consideration in estimating the extent of the myocardial damage. All physicians have encountered systolic apical murmurs which at the time of the examination could not be classified as functional or organic. In questionable cases all aspects of the problem must be taken into consideration, including the past history with particular reference to rheumatic fever, the presence of a possible infection, and the associated cardiac condition. In the absence of a history of rheumatic fever or of an infection, the significance of the murmur is determined wholly by the associated manifestations, and of these the size and configuration of the heart are by far the most important. If one can demonstrate to one's satisfaction by physical and roentgenologic examination that there is no alteration in the size and shape of the heart, organic heart disease is for the most part excluded. Occasionally, however, it may be necessary to postpone final judgment until there is time for further possible developments.

DR. SAMUEL A. LEVINE, Boston: It is not necessary to change a patient's mode of life merely because one hears a murmur. As Dr. Herrick said, one does not treat the murmur. The attitude of trying to interpret the systolic murmur is warranted because it may give a clue to what may be going on in the heart. It will be found that some of the patients who have been well all the time will develop outspoken aortic stenosis or mitral stenosis ten years later. One hasn't erred in the meantime, and it has been illuminating in picturing the development of a certain disease. That type of knowledge, I think, will prove fruitful.

THE CLINICAL VALUE OF HUMAN
CAPILLARY STUDIES

IN FEVER, MENTAL DEFICIENCY, NEPHRITIS, VASCULAR DISEASES, CLUBBED FINGERS, ARTHRITIS, TOBACCO SMOKING AND ARGYRIA

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Although the capillaries as a group exercise the most profound influence on the functions of the living body, their activity, especially in man, has been susceptible of direct study for only a short era in the history of medical science. A great volume of instructive work has since been produced, much of which has been confined to animals other than man. My purpose in this discussion, however, will be to outline briefly some of the more recent observations concerning the activities of the minor vessels of the skin in man which appear to have some value clinically, either (1) in adding evidence which results in changes in certain conceptions of physiology in normals, or pathologic variations in disease processes, or (2) in giving information of direct value in the study of single patients or groups of patients with similar diseases.

It should be clearly stated at the outset that although the capillaries may, under certain conditions, appear to have some independence of action, any studies such as those to be outlined must consider the capillaries as part of, and acting in relation to, the entire circulatory system and, indeed, the body as a whole. The vessels of the skin are also influenced by environmental factors.

The nailfolds offer the most favorable area for capillary study. Whenever indicated, however, observations have been made elsewhere on the body surface. The methods used have been previously described.¹

OBSERVATIONS ON THE MECHANISM OF FEVER

Observers have noted that the surface temperature rises in fever and that during a chill there is actually a sudden drop in temperature, which is followed by a rise again, often to a higher level than before. With a rise in temperature a great increase in the number of active capillaries and the rate of flow can be readily seen under the capillary microscope.

With the hope of helping to explain the cause and significance of this activity, we² made the following observations on man:

By means of a potentiometer and a thermocouple junction in the tip of a hypodermic needle, we were enabled to take temperature readings of the circulating blood and other tissues, following the work of Foged³ and others.⁴ In a series of afebrile patients it was found that the intravenous temperature, taken in the median cubital, jugular or branches of the saphenous veins, was always lower than the oral, hence rectal, tem-

perature.⁵ The least difference between the oral and intravenous temperature was 1.2 F.; the greatest difference thus far noted was 13 F. In a small series of patients the intra-arterial temperatures were also lower than the oral temperature but higher than the intravenous temperature. Foged reports two cases in which he secured intra-arterial readings. In one, the temperature equaled the rectal temperature, and in the other, it was lower than the rectal temperature. Further readings are necessary to establish definitely the relative position of the arterial temperature.

The intramuscular temperature was found to be uniformly higher than the oral temperature.

We then studied the relationship between the oral, the intravenous and the intramuscular temperature in fever under four groups: (a) fever produced by a disease process, i. e., pneumonia, Hodgkin's disease, rheumatic fever, pulmonary tuberculosis, bacterial endocarditis and the like; (b) fever produced by the hyperdiathermia machine (General Electric) as high as 105.0 F. by mouth; (c) fever produced by a 36 meter wavelength condenser machine (hyperthermy spark gap-Lepel) as high as 104.5 F.; (d) fever produced by the intravenous injection of *B. typhosus* vaccine.

In all cases, whatever the etiology of the fever, the same general relationship was maintained; namely, intravenous lowest, then mouth, and intramuscular temperature highest.

The greatly increased capillary activity, with the consistently highest intramuscular temperatures, and the lower blood temperatures seems to indicate that the object of the additional blood supply may be not a direct increase in local heat but rather a means of supplying the cells, especially of the muscles, with an increased food supply for metabolic activity and associated heat generation. There is inevitably a diffusion of this increased heat from the blood by conduction and radiation.

THE RELATIONSHIP BETWEEN CAPILLARY DEVELOPMENT AND MENTAL DEVELOPMENT

Jaensch and his co-workers⁶ in Berlin have clearly shown that in cretinism and certain other mental deficiency diseases the lack of mental development is paralleled by the lack of development of the capillaries of the skin. If thyroid extract is given to cretins early in life, the increase in intelligence accompanies increase in capillary development. The exact relationship between the increased circulatory activity and the improvement in mental and physical activity has not been determined.

Children with deficient mental and physical development show pathologically developed capillaries,⁷ but those with delayed physical development, but of normal or superior intelligence, show normal capillaries.⁸

In patients afflicted with hemiplegias from infancy, the capillaries on the affected side maintain the archiform state, while those of the unaffected side develop

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1. Duryce, A. W., and Wright, I. S.: *Modern Technic for the Study of Human Capillaries*, Am. J. M. Sc. 185: 664 (May) 1933.

2. Wright, I. S., and Johnson, H. J.: *Temperature of Circulating Blood and Other Tissues with Associated Observations of Capillary Activity*, Proc. Soc. Exper. Biol. & Med. 30: 758 (March) 1933.

3. Foged, Vena: *Blood Temperature in Man*, Scand. Arch. f. Physiol. 50: 109 (May) 1930; *The Temperature of the Blood*, Hospitals-til. 73: 1079 (Nov. 6) 1930.

4. Harris, K. E., and Marvin, H. M.: *Temperature of Venous Blood and Its Use in Estimating Rate of Blood Flow to Hand*, Heart 14: 1-17 (April) 1927; Bradburn, H. B., and Blalock, A.: *Relationship of Changes in Blood Flow Through an Extremity to Changes in Temperature*, Am. J. Physiol. 91: 115, (Dec.) 1929.

5. Temperatures of the mouth were used because (1) changing the thermocouple or from thermocouple to mercury thermometer introduced a possible source of error; (2) it was easier to be certain that the tip of the needle rested firmly against the undersurface of the tongue (known tissue); (3) the use of the needle made rectal readings more difficult, uncertain and perhaps uncomfortable; (4) the relationship between oral and rectal temperature has been fairly well, though not exactly, established.

6. Jaensch, Walther; Wittenberg, T.; von Leupoldt, D., and Gundermann, O.: *Die Hämiplegien bei Kindern*, Halle, Carl Marhold, 1929; *Die Biologie der Pers. an & Schwarzenberg*, 1931.

7. Powdermaker, Florence: *Capillary Forms in Relation to Certain Problems in Development*, Arch. Neurol. & Psychiat. 22: 1207 (Dec.) 1929.

8. Leader, S. D.: *Capillary Microscopy in Children*, Am. J. Dis. Child. 44: 403 (Aug.) 1932.

other diseases should not lead to the deduction that the stasis of the blood in the major blood vessels is responsible for clubbing, but only that they are coincidental manifestations.

2. Since greatly congested, stagnant capillaries may be present in nailfolds of patients for years without the development of clubbing of the fingers, and since the nailfold capillaries of many patients with advanced clubbing of the fingers appear normal in all respects, serious doubt may be entertained as to any definite relationship between these two conditions.

3. Other possible explanations for clubbing of the fingers, such as disturbance in the lymph drainage, changes in local or general metabolism, or the presence of toxic products, are thus far also without proof.

Of interest in this regard are the unpublished studies of Loeb and Richards¹⁴ of the Presbyterian Hospital of New York. These workers made comparative studies of the chemistry of the blood taken from the two arms in a small series of cases of unilateral clubbing of the fingers, in each instance associated with aortic aneurysm. The following determinations were made from an artery and a vein of each arm; oxygen content, oxygen capacity, oxygen per cent saturation; difference between oxygen readings in the corresponding artery and vein, carbon dioxide content volume per cent, carbon dioxide at 40 mm. pressure of carbon dioxide, difference between carbon dioxide readings in corresponding artery and vein; respiratory quotient, lactic acid, sugar, nonprotein nitrogen, phosphorus, calcium, p_{H} , and hematocrit readings. The results were such that no difference could be determined between the blood chemistry of the affected and of the unaffected extremity.

ARTHRITIS

Recent work by Kovacs, Wright and Duryee¹⁵ has again opened the problem of the relationship of circulation to arthritis. In more than 100 cases of arthritis of all types, the only consistent changes in the capillaries in the nailfold were found in fingers with joint swellings or Heberden's nodes. The decrease in capillary number and activity here noted could well be explained on the basis of mechanical pressure. I doubt the accuracy of a pathologic estimate based on the examination of nonvital material as to the activity of the capillaries within a joint and maintain that drawing conclusions of the condition and activity of the joint capillaries from observations of the capillaries of the skin should be a matter of great caution.

Further changes, such as lowered surface temperature, slowed capillary flow, and constrictions in the capillaries, were found in varying percentages, but in no instance did these exceed 55 per cent occurrence. Because of this lack of consistency, I cannot consider as proved that changes in the circulation, as indicated by present methods, are uniformly responsible for the pathologic changes found in arthritis.

THE EFFECT OF TOBACCO SMOKING ON THE VESSELS OF THE SKIN

Maddock and Coller¹⁶ reported in 1932 a series of twenty-one subjects in whom smoking tobacco produced a drop in temperature, as observed from the skin of

the fingers and toes. Cessation of smoking resulted in a gradual rise in temperature. Johnson,¹⁷ one of my co-workers, has confirmed these observations in a series of thirty-five subjects with the following exceptions: Six subjects showed no change after ten or more minutes of smoking. Two subjects showed an increase in temperature. In each of his subjects the room temperature was lower than the surface temperature taken at the finger tips. The extent of the drop varied from 2 to 11 degrees F. Barker¹⁸ has recently reported similar results. I have observed four patients in whom the surface temperature at the finger tips was equal to the room temperature. In none of these was there any drop on smoking. In two, there was a rise of 2 degrees F.

In certain individuals I have been able to note a marked slowing and often stasis in the capillary circulation at the nailfold during the smoking of a single cigaret. This phenomenon, when present, can be seen after the first few deep inhalations. The temperature drop¹⁷ and the slowing of the capillary flow seem appreciable only when the smoker inhales. The flow apparently is especially affected in subjects who complain of systemic symptoms from the use of tobacco. In some cases the normal circulatory activity returned during the smoking of several cigarets, while in others marked slowing and stasis remained until the completion of the smoking. The slowing could often be observed to follow a timal relationship to deep inhalations; i. e., about ten seconds following the inhalation the flow would slow perceptibly and often stop for varying lengths of time up to fifteen seconds or occasionally longer. It would then regain its former rate, but another puff would cause a repetition of the cycle. Deep breathing of room atmosphere did not in any instance produce this result.

Krogh and Lewis¹⁹ have shown that local temperature is affected by the rate of the arteriocapillary circulation; if the circulation slows up, local temperature falls.

This seems a logical correlation of the temperature and capillary conditions during smoking. The fact that one cannot always succeed in observing the capillary changes with the temperature drop may well be due to the inadequacies of present-day technic. The fact that individuals do not all react with either of these changes may be attributed to different degrees of absorption and sensitivity.

The relationship of this phenomenon to the frequent symptoms complained of by smokers presents an interesting field for speculation. One may ask whether by local action similar spasm, producing ischemia of areas of the brain or heart muscle, may not result in dizziness, nausea, unexplained anginoid pains and other phenomena. However, these symptoms may be produced by stimulation of the various parts of the sympathetic nervous system. In several patients, with complaints of tingling of the fingers from various causes, the smoking of a single cigaret would result in an increase in symptoms, accompanied by the phenomena in the capillary bed. Whether the spastic reaction takes place in the arterioles or capillaries cannot at present be determined, but it constitutes a contraindication to smoking with any condition of impaired circulation to the extremities.

14. Loeb, R., and Richards, D.: Personal communication to the author.

15. Kovacs, Joseph; Wright, I. S., and Duryee, A. W.: The Surface Temperature and the Minute Blood Vessels of the Skin in Arthritis, *J. A. M. A.* 100:1018-1021 (April 1) 1933.

16. Maddock, W. C., and Coller, F. A.: Peripheral Vasoconstriction by Skin Temperature Changes, *Proc. Soc. Exper. Biol.* (Jan.) 1932.

17. Johnson, H. J.: Personal communication to the author; prepared for publication.

18. Barker, N. W.: Vasoconstrictor Effects of Tobacco Smoking, *Proc. Staff. Meet., Mayo Clinic* 8:284 (May 10) 1933.

19. Krogh and Lewis, cited by Marinresco and Bruch.⁹

These reactions in the blood vessels may be productive of end-results of two distinct types: (1) changes in the blood vessels themselves, and (2) changes based on irregularities in the distribution of blood in the organs which they supply.

The cause of these phenomena has yet to be determined. Carbon monoxide,²⁰ nicotine, the nicotine-free fraction of tobacco, and various products resulting from the chemistry of burning tobacco must be considered as possible offenders. Barker¹⁸ has presented strong evidence against the smoke from the cigaret paper being a causative factor. In our tests, various standard brands of cigarets were used with similar results.

ARGYRIA

I have recently seen several patients suffering from the bluish-gray discoloration of the skin due to the deposit of insoluble silver albuminate following the long continued administration of a soluble silver salt. In each instance the first visible evidence of this discoloration was noted along the distal margin of the lunulae of the nails in the nail beds and was believed to be cyanosis due to circulatory stasis. The bluish gray then gradually spread under the rest of the nails accompanying its appearance elsewhere in the skin.

Examination of the nailfold capillaries showed a normal appearance with normal to rapid rate of flow. Such a picture will rule out cyanosis due to stasis, which might otherwise be difficult to eliminate during the earliest stage.

The appearance of a bluish-gray zone just distal to the lunula of the nail should be an indication for the immediate discontinuance of any preparation containing a silver salt, at least until the possibility of very early argyria has been ruled out. In my patients, negligence of such precaution seems to have been followed by steady progression of this unpleasant condition.

Whether careful observation and questioning will show that this early sign is present in a large percentage of these patients in time to permit the prevention of generalized bluish discoloration remains to be determined. Evidence in favor of argyria would be lack of any indication of congestion of the nailfold capillary circulation, or of any insufficiency in the pulmonary or major circulation; lack of history of intake of acetanilid or allied substances; absence of spectroscopic bands of sulphemoglobin or methemoglobin in the blood, and, finally, biopsy if desired.

525 Park Avenue.

ABSTRACT OF DISCUSSION

DR. SOMA WEISS, Boston: In the understanding of a number of fundamental clinical problems, knowledge of the state of the capillaries and of the dynamics of the capillary circulation is essential. It is between the capillaries and the tissue cells proper that the most vital functions of the body take place. These functions have remained obscure because of the lack of available methods for their study. Recently, methods have been devised which make possible the estimation of the capillary pressure of the skin, the visualization of the capillary blood flow of the skin and of other bodily surfaces, the estimation of the capillary resistance and, to a certain extent, the capillary permeability. Complicated and inexact some of these methods may be; nevertheless they serve to enter an opening wedge in the clarification of such fundamental problems as peripheral and pulmonary edema, purpuric and other skin lesions, and conditions discussed by Dr. Wright. Physicians still cherish

a reserved respect for the physiologic approach to clinical symptoms and problems. They consider physiologic methods complicated and difficult, and often of only academic interest. It is therefore particularly fortunate that Dr. Wright has brought these problems before this gathering. It serves to impress on us that in one problem the naked eye, in another the microscope, in one morphology, and in another physiology brings understanding.

DR. NELSON W. BARKER, Rochester, Minn.: The question of morphology of the capillaries alone has not been sufficiently emphasized. At present there are no satisfactory observations on capillaries which will give definite data concerning what may be departures from the normal. Part of this has been due to the fact that it was extremely difficult adequately to record these morphologic changes. With the advent of the newer photographic methods, as has been shown by Dr. Wright, these records will now be made available. Capillaries have been studied by Brown and Roth for the last eight years, and their observations agree to a great extent with many of the observations made by Dr. Wright, so far as peripheral vascular diseases are concerned. I should like to ask Dr. Wright whether he has observed any specific changes in the morphology of the capillaries in thrombo-angiitis obliterans and, if so, just what these changes are.

DR. IRVING S. WRIGHT, New York: I realize that this work is in a very early stage and that my conclusions may be subject to change in general conception. It is not necessary to have elaborate apparatus to observe the capillaries. In the last twenty-four hours I have put up a simple microscope with a simple lighting arrangement which would enable any physician to observe capillaries in his office. The actual procedure is not difficult. However, one must look at a great many patients before one can draw conclusions, first in normal individuals and then in various disease conditions. One should not feel that this procedure does not offer great possibilities just because he is unable to recognize variations immediately. It takes practice. I would stress the similarity in usefulness between capillary microscopy and the ophthalmoscopic examination of the fundus. In itself it is not a complete diagnostic procedure. It merely helps one to obtain a better conception of the disease processes and their variations. The subject of thrombo-angiitis obliterans presents one of the more difficult problems because, in the first place, the best part of the body surface in which to observe capillaries is the nail fold. Often in cases of thrombo-angiitis obliterans, in the instances in which early gangrene or marked changes have taken place, the nail fold has been involved and the vessels are hard to see. In thrombo-angiitis obliterans, various degrees of spastic and organic factors are present, in some cases the changes that Miss Roth has shown in the exhibit, not unlike those of Raynaud's disease but to a lesser degree. One may safely assume that in the advanced cases the capillary flow has been markedly affected and that the actual structure of the capillaries is difficult to observe. Finally, I would say that my object in the exhibit and in my paper has been to make the medical profession capillary conscious.

Pernicious and Macrocytic Anemias.—It is now possible to explain why certain cases of macrocytic anemia will respond to both liver extract and autolyzed yeast and others only to liver extract. The difference appears to depend on the presence or absence of the intrinsic factor. In the light of this evidence it is clear that the common factor for producing macrocytic anemia is the failure of the specific reaction between the extrinsic and the intrinsic factors. These anemias should, then, occur both where, on the one hand, the diet is deficient in vitamin B₁₂, and on the other hand, where, although the diet is not grossly deficient, lack of the intrinsic factor is found. Thus, sprue and the macrocytic anemias of the tropics occur in communities or in individuals partaking of defective diets and show gastric anacidity less commonly than is found in patients with Addisonian pernicious anemia, who usually have more normal diet habits. In many cases a combination of gastric defect and dietary deficiency may exist, which would have the same result upon the specific hematopoietic reaction as a total absence of either of its components.—Castle, W. B.: The Etiology of Pernicious Anemia and Related Macrocytic Anemias, *Ann. Int. Med.* 7:2 (July) 1933.

20. Gettler, A. O., and Mattice, Marjorie R.: The "Normal" Carbon Monoxide Content of the Blood, *J. A. M. A.* 100:92 (Jan. 14) 1933. Hanson, H. B., and Hastings, A. B.: The Effect of Smoking on the Carbon Monoxide Content of the Blood, *ibid.* 100:1481 (May 13) 1933.

CARCINOMA OF THE JEJUNUM

REPORT OF A CASE

S. E. BARNHART, M.D.

BATTLE CREEK, MICH.

Carcinoma of the jejunum is encountered so seldom that I feel justified in reporting a case recently seen in the Battle Creek Sanitarium clinic.

As the anatomy and physiology of the intestinal tract is well known, I will merely mention that the theory of carcinoma appearing more frequently in the stomach and lower bowel is based on the fact that they deal with the more solid material, while the jejunal section has to do more with the liquid state and hence is less liable to irritation.

In reviewing the literature, I find that carcinoma of the jejunum is comparatively rare. A report from the Vienna General Hospital by Johnson¹ shows that in a series of 41,883 autopsies not a single carcinoma of the jejunum was found, although in the series there were 343 cases of carcinoma in other parts of the intestinal tract. In 1904, Nothnagel² found 9 cases in 3,585 deaths from cancer. In 1927, a study of the literature was made by Hellström³ from which he collected only seventy cases of carcinoma proved by operation, including both jejunum and ileum, himself reporting three. Since 1927, Morrison,⁴ Roblee,⁵ d'Allaines⁶ and Harris⁷ have each reported one case, making in all, up to the beginning of 1931, seventy-seven cases. Since then, some additional cases have been reported.

From the cases reported, it would appear that carcinoma is liable to occur earlier in life in the jejunum than elsewhere in the intestinal tract, in men twice as often as in women, generally growing in a circular

The symptoms, which depend largely on the amount of stenosis found in the majority of cases, are diarrhea, constipation, gastric distress and vomiting. There may or may not be visible peristalsis; in this case none was observed. The nonstenotic type is more rare and the symptoms not so well marked.

With a colicky pain in the middle of the upper part of the abdomen, associated with vomiting, especially if the vomitus contains duodenal content with bile, carcinoma of the jejunum should be considered possible.

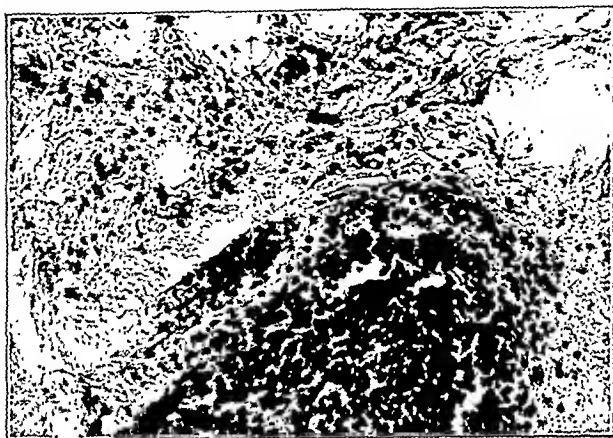


Fig. 2.—Adenocarcinoma with proliferation of epithelium.

Careful fractional gastric analysis should be made and stools studied for the presence of blood. The stomach may or may not show delay in emptying time. Our case showed a marked gastric delay with ordinary food, but the stomach emptied readily when the barium meal study was made. Gastric acidity may be subnormal, owing to the regurgitation of duodenal content.

Only one line of treatment presents itself in these cases, and that is surgical, either radical or palliative. According to Hellström, the mortality was 36 per cent in seventy cases. The radical operation, according to Harris, offers a 16 per cent chance of cure. The growth usually develops slowly.

Since the prognosis is poor, an early diagnosis is desirable.

REPORT OF CASE

J. D., a man, aged 58, American, a merchant, married, entered the Battle Creek Sanitarium clinic, May 18, 1927, with a history of chronic obstinate constipation, dating back ten years, and gastric digestive disturbance for the past two or three years, manifested by a burning sensation in the region of the stomach, occurring both forenoon and afternoon and occasionally at night, and always relieved by sodium bicarbonate and food. The symptoms did not occur every day, were more pronounced when the patient smoked excessively, were not seasonal, and did not come in attacks. The patient had never vomited; some regurgitation had occurred, but the regurgitated matter was not mixed with blood. He never noticed any black tarry stools. The family history was negative as to constitutional diseases.

The patient had had typhoid, and he had a syphilitic infection at the age of 25. Three years later he was given anti-syphilitic treatment. There was nothing else of importance in the previous history.

Repeated blood counts and chemical examinations of the blood, including a Wassermann test, examination of the urine and stool, and a fractional gastric test were made, all being practically negative except that there was a very weak Kolmer and a four plus Kahn reaction.

From May, 1927, to March, 1931, he passed through the clinic yearly with no evidence of serious trouble, but on May 15, 1932, he complained of exhaustion, obstinate constipation

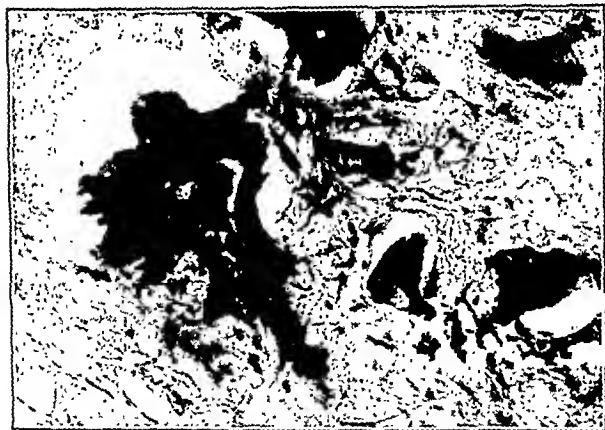


Fig. 1.—Adenocarcinoma with involvement of glandular tubules.

manner and constricting in character, involving but a small cross section of the intestine. These neoplasms are usually adenomatous and metastasize late.

From the Battle Creek Sanitarium.

1. Johnson, R.: Carcinoma of the Jejunum and Ileum, Brit. J. Surg. 9: 422 (Jan.) 1922.

2. Nothnagel, H.: Cancer, in: Pyle: Cyclopedia of Practical Medicine and Surgery, 1904.

3. Hellström, H.: Cancer of Jejunum and Ileum, Acta chir. Scand. 44: 100 (1927).

4. Morrison, J.: Intestinal Obstruction Caused by Primary Carcinoma of the Proximal Jejunum, Am. J. Surg. 2: 154 (Feb.) 1927.

5. Roblee, M. A.: Secondary Adenocarcinoma of the Ovaries from the Jejunum, Am. J. Obst. & Gynec. 18: 780 (Dec.) 1929.

6. d'Allaines, F.: Sur l'épithélioma primitif du jeuno-ileon, J. de chir. 33: 449 (April) 1929.

7. Harris, F. L.: Surgical Service of Mount Zion Hospital, Feb. 10, 1931.

and daily vomiting for the previous three or four weeks. He had lost 10 pounds (4.5 Kg.) during this time.

On physical examination, no tenderness was elicited over the abdomen and no tumor mass was palpable. A neurologic examination was negative. A tentative diagnosis of pyloric obstruction was made.

The fractional gastric test was made with difficulty, owing to the clogging of the tube with spinach eaten twenty hours before, but it showed a slightly subnormal free hydrochloric acid at first with a slight increase during the later periods. With the barium roentgen study, the result was different, the emptying time being slightly more than three and a half hours. In addition to some dilatation of the duodenum, there was a marked dilatation and a greatly delayed motility in a loop of the jejunum. The barium still in the loop at eight and a half hours had disappeared at the twenty-four hour observation.

A recheck of the stomach and small intestine was made under tincture of belladonna, and a third under atropine hypodermically. At the last examination the jejunal loop appeared more dilated than before. The result of the studies indicated quite conclusively that we were dealing not with a spasm but probably with a neoplasm of the jejunum. It was quite evident that surgical assistance was imperative, so a laparotomy was advised and performed.

When the abdomen was opened, all of the ileum was contracted. The upper 18 inches of the jejunum was greatly dilated, about the size of the forearm. The dilated intestine was followed down, and approximately 2 feet from the duodenal-jejunal junction a stenosing neoplasm, which grossly resembled a carcinoma, was encountered. The jejunum was greatly dilated above this band and markedly contracted below. On palpation, no lumen could be made out. There was a group of eight or ten enlarged glands in the mesentery beneath the neoplasm. Three feet of the small intestine was resected, and a cross section of the growth revealed the presence of an adenocarcinoma with metastasis to the mesentery lymph glands.

The patient made a good and uneventful recovery. In February, 1933, he returned to the clinic in fine physical condition, having gained 30 pounds (13.6 Kg.).

ATOPY TO ACACIA (GUM ARABIC)

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AND

HORACE S. BALDWIN, M.D.

NEW YORK

The widespread use of acacia (gum arabic) in medicine and commerce makes it of interest from the standpoint of allergy. In the present paper is reported a case of atopy to acacia which we believe is the first one to be so proved. At the same time, a general review is made of the subject of acacia from the point of view of its chemical and therapeutic interest, and its importance allergically is stressed.

T. P. C., a white man, aged 53, a plaster molder in a large candy factory, admitted to the New York Hospital Allergy Clinic, Oct. 20, 1932, complained of bronchial asthma. His asthma started in July, 1931, six months after he started to work in the factory. Since that time it has been perennial, with increased severity in June and September. There has been no definite history of hay fever. The patient noticed, however, that on coming in contact with the dust of the factory he was likely to sneeze and have a burning sensation in his eyes. It is of incidental interest that eleven months after the onset of asthma he was seized with a typical attack of coronary thrombosis which necessitated his remaining away from work for seven weeks; i. e., from June 10 to about Sept. 1, 1932. During this period he was relatively free from asthma, but on resuming work it returned.

Physical examination, on admission to the clinic, showed the typical râles of asthma and, at the base of the lungs, smaller râles more typical of cardiac decompensation. The liver was not enlarged. There was no dependent edema. The heart sounds were distant. No enlargement was made out. The blood pressure was 140 systolic, 80 diastolic. A special nose and throat examination was essentially negative. An electrocardiogram showed evidence of a previous attack of coronary occlusion. The sedimentation test was within normal limits. The blood showed 8 per cent eosinophils. A Wassermann test was negative.

Skin tests were done with the usual inhalants, and food tests were made by the intradermal method. Mild reactions were obtained to timothy grass and ragweed pollen. The patient was next directed to bring in dust collected from his factory environment, and a scratch test to this sample gave a marked reaction. The dust consisted principally of acacia, cocoa bean, corn-starch, dextrose and plaster. When the separate components were tested, the crude acacia was found to give a markedly positive reaction. Purified acacia was next used for testing and was found to be even more reactive than the crude acacia used at the factory, giving markedly positive reactions, both by scratch and intradermally in as low as 1:5,000 dilution. Blood was taken for passive transfer, and again very definitely positive reactions were obtained. Control sites were negative.

The patient was advised to arrange his work bench so that it would be enclosed, with a view to limiting his contact with the factory dust. A series of desensitizing injections was also proposed. By carrying out the first suggestion, his asthmatic state was considerably alleviated, but the series of hyposensitizing inoculations has not been possible in view of the patient's inability to attend the clinic regularly.

In order to see if other routine allergic patients reacted to acacia, thirty cases were tested to this substance by the scratch and intradermal methods. No positive reactions were obtained.

Atopy to acacia is of interest because of its widespread use in commerce and medicine. Botanists define acacia as an exudate of the tree *Acacia Senegal*. This tree is a member of the large botanical family called Mimosoidae, related members of which are widely distributed as herbs, shrubs, vines or trees. There is evidence interpreted by Beijerinck¹ as pointing to the elaboration of acacia as a result of the activities of molds, and by Greig Smith² as showing that it is a product of the metabolism of certain bacteria. As neither of these workers has proved, however, that contamination of acacia with the appropriate organism does not take place after its formation, the hypothesis that acacia originates through the activities of microorganisms, though attractive from the standpoint of bacterial specificity, must be considered as unproved.

Acacia as it is collected has a mucilaginous appearance. This and similar exudates from other trees comprise the so-called gums of commerce.

Chemically, acacia is classed as an inert colloid and is a member of the polysaccharide subdivision of the carbohydrates. Related polysaccharides are the dextrans, glycogen, cellulose and starch. All these substances are amorphous, odorless and translucent and yield on hydrolysis one or more sugars, generally pentoses and hexoses.

Commercially, acacia is used frequently in the preparation of pharmaceuticals as an emulsifying agent. Its demulcent properties are utilized in the manufacture of large quantities of lozenges, troches and gummy candies.

As a medical therapeutic agent, acacia has been increasingly used in cases of shock, especially in those

From the New York Hospital and the Department of Medicine of Cornell University Medical College.

Read before the Meeting of the Society of Asthma and Allied Conditions, Washington, D. C., May 6, 1933.

1. Beijerinck, M. W.: Arch. néerl. d. sc. exactes 19:43, 1884.
2. Greig Smith, R.: J. Soc. Chem. Indust., London 23:105 and 972, 1904.

caused by loss of blood. In a number of clinics, infusion of acacia has replaced transfusions of blood; at the Mayo Clinic, 3,000 such infusions have been given in the last few years. Recently, infusions of acacia have been reported by Hartmann and his colleagues³ as of benefit in reducing nephritic edema.

Workers at the Mayo Clinic have lately become interested in the possibility of sensitivity to acacia because of its general use there. Maytum and Magath,⁴ in their analysis of patients who had received infusions of acacia, have found only one case that gave an untoward reaction. Skin tests to acacia on this patient were negative. In this case, during a second infusion of acacia, after an interval of seven months, the patient developed nasal obstruction, lacrimation and laryngeal stridor, all of which were at once relieved by the administration of epinephrine. This was the only reaction that occurred in the 3,000 cases mentioned. It should be noted that in most of these cases only one infusion needed to be given. These same workers have attempted to sensitize animals to acacia. In the case of rabbits they were unsuccessful, but of nineteen guinea-pigs sensitized to acacia, seven showed no results; in four, anaphylaxis was mild; in three, it was fairly severe; in two, it was very severe, and three of the guinea-pigs died. From this experiment it was concluded that acacia has mild antigenic properties.

At our request, Dr. Lillian K. P. Farrar, of the Women's Hospital, where infusions of acacia have been frequently used, kindly made skin tests on twelve patients, at intervals of from ten to twenty-five days following infusion. No positive reactions were obtained.

The fact that acacia is listed as a carbohydrate prompted us to have acacia powder analyzed for its nitrogen content by Mr. Vincent Toscani, chemist of the Russell Sage Laboratory at Cornell University Medical College. In this analysis, 0.5 per cent of total nitrogen was obtained. A positive biuret test indicated the presence of protein nitrogen. A sample of the "soluble specific substance" derived from acacia by Heidelberger, Avery and Goebel,⁵ which is interesting because of its precipitating activity for types II and III antipneumococcus serum, was obtained through the kindness of Dr. Heidelberger. This failed to give a positive skin reaction either in the patient herein described or by passive transfer. Whether this finding has any bearing on the problem of whether the specific excitant in acacia is of carbohydrate or of protein nature is doubtful, as evidence is given by Heidelberger and his associates that "the specifically reacting substance for the pneumococcus type II and III immune serum is formed from the original gum arabic, probably by removal of a pentose grouping in glucosidic union, since the specific fraction contains less than one half of the pentose of the gum arabic itself."

SUMMARY

1. In a case of bronchial asthma due to sensitivity to acacia, the sensitivity was confirmed by clinical history, direct skin testing and passive transfer.

2. Efforts to find positive reactions to skin tests on patients following infusions of acacia have been unsuc-

cessful. Nevertheless, since the possibility of sensitivity to acacia exists, it is deemed advisable that patients should receive skin tests, previous to the administration of acacia parenterally, in order that a detrimental reaction may be avoided in case the skin test should indicate sensitivity.

2 East Ninety-Fourth Street—135 East Sixty-Fifth Street.

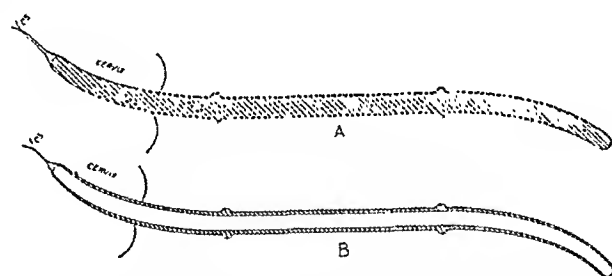
Clinical Notes, Suggestions and New Instruments

MODIFICATION OF HANK'S CERVICAL DILATOR

RAYMOND L. BRADLEY, M.D., HOUSTON, TEXAS
Consultant in Obstetrics, Jefferson Davis Hospital

Probably few physicians who practice gynecology do not have a set of Hank's dilators in their instrument case. These dilators are very handy to use as a preliminary dilator before using a double bladed instrument and they give sufficient dilatation in many cases. Cervical tears can hardly result from the use of this dilator. There has always been one serious objection to the Hank dilator, however, this being the back pressure induced by the pumping action when the instrument is inserted into the canal, the dilator acting as a piston (shown at A in the illustration).

Several years ago, I was especially impressed with this objection when Sampson brought out the possibility of endometrial tissue being spilled from the ends of the tubes into the pelvis. Whether or not one is inclined to accept Sampson's theory as regards endometrial tissues and transplants, it remains a fact that infectious material may easily be forced out the end of an infected tube. Considerable force is established when a solid sound is forced into the cervical canal, which can very easily be overcome by using a modified Hank



A, diagrammatic cross-section of solid Hegar sound being inserted into cervix, showing piston action of sound; B, cross section of modified dilator, showing continuous canal through which pressure is released as generated.

dilator, the old set being satisfactory for alteration provided they are of the hollow type. If they are of the solid type, they cannot be drilled in a satisfactory manner.

In order to overcome the piston action, it is necessary that a continuous canal extend from end to end of the dilator as shown at B, thus releasing the pressure as it is generated. If the instrument is hollow, it is only necessary to have holes drilled in the ends and the edges smoothed. The set I have was made through a dealer in New Orleans, before the sets were made hollow.

While this alteration was made for use as a dilator, I have found the smaller sizes to be of use in office work as a urethral dilator and catheter, and as an electrode in diathermy to the cervix. The drainage feature here is an advantage over the solid electrode.

Should the instrument manufacturers feel that this alteration is justifiable, I am sure that it will be accepted by the medical profession as a safeguard against the only objection to an otherwise most useful instrument.

1110 Rosalie Avenue.

3. Hartmann, A. F.; Senn, M. J. E.; Nelson, Martha, and Perley, Anna M.: The Use of Acacia in the Treatment of Edema, J. A. M. A. 100: 251 (Jan. 28) 1933.

4. Maytum, C. K., and Magath, T. B.: Sensitivity to Acacia, J. A. M. A. 99: 2251 (Dec. 31) 1932.

5. Heidelberger, Michael; Goebel, W. F., and Avery, O. T.: The Soluble Specific Substance of Pneumococcus, J. Exper. Med. 42: 769-727 (Nov.) 1925.

twenty times its volume of water containing about 0.1 per cent of hydrochloric acid. The claim for absence or prevention of "leakage" has not been accepted by the Council for any similar emulsion, though it has been frequently made.

Later the firm submitted revised circulars in which the objectionable statement regarding constipation has been deleted, but the word "constipation" was not deleted from the revised trade package circular. The product is still marketed under the name Kondremul. The firm also submitted a report of trials made under the direction of a physician to show that the product in comparison with others causes or is accompanied by no measurable "leakage." The Council's referee reported that this work does not afford evidence of the superiority of Kondremul over other emulsions of liquid petrolatum. The firm's report states that in each instance the daily dose given was 15 cc., but the directions for the use of Kondremul call for twice that amount, one tablespoonful in the morning and one on retiring. It is misleading to compare one tablespoonful of liquid petrolatum with that dose of the emulsion which contains only about half the volume of liquid petrolatum. The report shows variation in the diameter of droplets in Kondremul of from 6 to 40 microns; in another commercial product of from 6 to 80 microns. No essential difference is apparent. The fact that Kondremul emulsion separates on standing causes the referee to suspect that a fresher specimen of Kondremul than of the compared preparation was used. This would be of no importance even though there was always an average difference of 11 microns in the diameter of the oil droplets. In the report the "leakage" appears to have been measured as the amount of oil that separated from the stool. That is not the commonly accepted meaning of the term; it refers to the escape of oil in amounts that soil the clothing or render the parts about the anus oily.

The Council voted to confirm its decision that Kondremul (Plain) and Kondremul with Phenolphthalein are unacceptable for New and Nonofficial Remedies because the amount of potent ingredient is not stated on the labels because the claims for absence of "leakage" is unwarranted, and because the products have not sufficient originality to justify the use of the proprietary and uninforming name Kondremul.

Committee on Foods

GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

FORTIFICATION OF FOODS OTHER THAN TABLE SALT WITH IODINE OR IODINE COMPOUNDS

The fortification of foods other than table salt with iodine or iodine compounds for dispensing additional food iodine to the public and supplementing that naturally present in foods is unnecessary and may lead to excessive iodine intake and endanger public health. Foods so fortified, other than table salt, will not be eligible for acceptance.

"HEALTH FOOD" CLAIMS AND THE TERM "HEALTHFUL"

The term "health food" and equivalent claims or statements to the effect that a food gives or assures "health" are vague, misinformative and misleading. An adequate or complete diet and the recognized nutritional essentials established by the science of nutrition are necessary for "health," but "health" depends on many other factors than those provided by such diet or nutritional essentials. No one food is essential for "health"; there are no "health foods." Statements of well established nutritional or physiologic values of foods are permissible.

The term "healthful" is frequently encountered in food advertising. As used, it commonly means that the food described

corrects a possible nutritive deficiency or some abnormal condition in such a manner as actively to improve health. It incorrectly implies that the food possesses unique (or unusual) health-giving properties. The term has a popular specific "health food" significance which makes its use in advertising misinformative and misleading.

"Healthful" and "wholesome" by dictionary definition have almost identical meanings; the former, however, intimates an active significance, whereas the latter signifies quality or condition. "Wholesome" indicates that a food so described is sound, clean, fit for consumption and free of any objectionable qualities; it is appropriate for characterizing foods fulfilling these qualifications and should replace "healthful" as used in food advertising.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

JELKE GOOD LUCK MAYONNAISE

Manufacturer.—John F. Jelke Company, Chicago.

Description.—Mayonnaise containing cottonseed (or corn) oil, eggs, water, sucrose, distilled vinegar, salt and mustard.

Manufacture.—The frozen eggs are beaten; the water and then the cane sugar, salt, mustard, vinegar and salad oil are beaten in consecutively to produce an emulsion which is homogenized and automatically filled into glass jars.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 23.4 |
| Ash (salt free) | 0.3 |
| Sodium chloride (NaCl) | 1.8 |
| Fat (ether extract) | 65.4 |
| Protein (N \times 6.25) | 2.9 |
| Reducing sugars as invert | 0.0 |
| Sucrose | 5.0 |
| Lipoid phosphoric acid (P ₂ O ₅) | 0.107 |
| Total phosphoric acid (P ₂ O ₅) | 0.111 |
| Carbohydrates (by difference) | 5.6 |
| Titrate acidity as acetic acid | 0.4 |

Calories.—6.2 per gram; 176 per ounce.

Claims of Manufacturer.—Conforms with the respective United States Department of Agriculture definition and standard.

SPINTRATE

Manufacturer.—Spinach Products Company of South Carolina, Columbia, S. C.

Description.—A dried powdered spinach; an abundant source of vitamins A, B and G, iron and iodine.

Manufacture.—Fresh, selected, hand picked spinach is trimmed of the butts and bruised or discolored leaves, washed in water, rinsed and centrifugated to remove adhering surface water. It is dried in a specially constructed apparatus in a recirculating current of practically inert gas, largely carbon dioxide, the temperature of which does not exceed 66 C. The dried product is pulverized and screened; the powder of desired fineness is mechanically packed in glass jars.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture | 7.9 |
| Ash | 13.6 |
| Fat (ether extract) | 4.5 |
| Protein (N \times 6.25) | 31.5 |
| Crude fiber | 8.4 |
| Carbohydrates other than crude fiber (by difference) | 34.1 |
| Average (parts per million) | |
| Iron (Fe) | 530 |
| Calcium (Ca) | 10,700 |
| Phosphorus (P) | 6,400 |
| Copper (Cu) | 10 |
| Manganese (Mn) | 140 |
| parts per billion | |
| Iodine | 700 |

Calories.—3.0 per gram; 85 per ounce.

Vitamins.—Biologic report shows that vitamins C and D are practically absent; the product contains 6,000 units

(Sherman) of vitamin A per ounce (nearly half the A potency of cod liver oil and four times that of butter) and 60 units (Sherman) of vitamin B complex per ounce (approximately that of dried brewers' yeast). The vitamin B content is about twice and the G content about equal to that of dried brewers' yeast.

Claims of Manufacturer.—Especially adapted for use in the diet of infants and the sick in accordance with the physician's directions. It is an excellent source of utilizable iron for counteracting nutritional anemia and an abundant source of food iodine.

HAWAIIAN FINEST QUALITY PINEAPPLE

VACUUM PACKED (CRUSHED, SLICED AND TIDBITS)

- (1) BURKE'S, (2) CAMEL, (3) DEXTER'S, (4) FAIRWAY,
(5) HALE'S LEADER, (6) HALE'S PRIDE, (7) HAPPY
HOUR, (8) HOMESPUN, (9) ROUNDY'S,
(10) S AND F, AND (11) TABLE

QUEEN BRANDS

Packer.—Hawaiian Pineapple Company, Ltd., San Francisco.

Distributors.—1. The Burke Grocery Company, Cincinnati.
2 and 7: Campbell Holton and Company, Bloomington, Ill.
3 and 9: Roundy, Peckham and Dexter Company, Milwaukee.
4: Twin City Wholesale Grocery Company, St. Paul and Minneapolis.

5 and 6: Hale-Halsell Company, McAlester, Okla.

8: Phillips-Lewis Co., Inc., Richmond, Va.

10 and 11: Smart and Final Company, Ltd., Pasadena, San Bernadino, Santa Ana, Wilmington and Los Angeles, Calif.

Description.—Canned pineapple (sliced, crushed and tidbits) packed in concentrated pineapple juice syrup with added sucrose. The same as Doles 1, 2 and 3 Hawaiian canned pineapple products (THE JOURNAL, April 8, 1933, p. 1106, and April 29, 1933, p. 1338).

HOMOGENIZED PASTEURIZED MILK

ADVERTISING OF McDONALD

DAIRY COMPANY

Manufacturer.—McDonald Dairy Company, Flint, Mich.

Description.—Advertising of bottled, pasteurized, homogenized milk.

Preparation.—Milk delivered cold from producers under city department of health inspection is tested for milk fat, acidity and sediment and its reaction to methylene blue; unsatisfactory milk is rejected. Acceptable milk is pasteurized by the holding method (68 C. for thirty minutes), cooled to 52 C., homogenized under 3,000 pounds pressure, cooled to 4 C. and automatically filled in bottles which have been washed in 3 per cent sodium hydroxide solution.

Analysis (submitted by manufacturer).—

| | per cent |
|---------------------------------|----------|
| Moisture | 87.4 |
| Total solids | 12.6 |
| Ash | 0.7 |
| Fat | 3.8 |
| Protein (N \times 6.38) | 3.2 |
| Lactose (by difference) | 4.9 |

The butter fat varies between 3.8 and 4.0 per cent.

Calories.—0.7 per gram; 20 per ounce.

Claims of Manufacturer.—The cream does not separate. The curd formed in the stomach is softer than that from unhomogenized milk.

ROTH'S RYE BREAD

Manufacturer.—The A. Roth Baking Company, Newport, Ky.

Description.—Rye bread prepared by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) from wheat "clear" flour and medium dark rye flour, water, powdered buttermilk, salt, caraway seed, yeast, lard and malt syrup.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture (entire loaf) | 35.6 |
| Ash | 1.0 |
| Fat | 1.9 |
| Protein (N \times 6.25) | 10.4 |
| Crude fiber | 0.9 |
| Carbohydrates other than crude fiber (by difference) .. | 50.2 |

Calories.—2.6 per gram; 74 per ounce.

GLADIOLA PATENT FLOUR-PHOSPHATE

ADDED (MATURED, BLEACHED)

FANT'S FAIRY PATENT FLOUR-PHOSPHATE

ADDED (MATURED, BLEACHED)

Manufacturer.—Fant Milling Company, Sherman, Texas.

Description.—Patent flours milled from a blend of soft and hard wheats containing 0.5 per cent of added calcium acid phosphate; bleached.

Manufacturer.—Selected wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and with nitrogen trichloride (one-ninth ounce per 196 pounds), and admixed with calcium acid phosphate (1 part to 195 parts of flour).

Analysis (submitted by manufacturer).—

| | per cent |
|---|-------------|
| Moisture | 13.0 -14.0 |
| Ash | 0.76 - 0.80 |
| Fat (ether extraction method) | 0.8 - 1.2 |
| Protein (N \times 5.7) | 9.0 -11.0 |
| Crude fiber | 0.3 - 0.5 |
| Carbohydrates other than crude fiber (by difference) .. | 76.1 -72.5 |

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—Phosphated patent flours intended especially for biscuit baking.

CLAPP'S ORIGINAL PUREE OF ASPARAGUS

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Strained cooked asparagus. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacturer.—Purchased canned asparagus is strained in an atmosphere of water vapor and subsequently treated as described for Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

The canned asparagus is prepared from young, tender asparagus, which is washed, inspected to remove unsuitable material, again washed, cut into small pieces and packed into tins; hot water is added; the cans are passed through an exhaustor to remove absorbed air, sealed, cooked under pressure and immediately cooled.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 94.1 |
| Total solids | 5.9 |
| Ash | 1.2 |
| Fat (ether extract) | 0.2 |
| Protein (N \times 6.25) | 1.4 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference) .. | 2.6 |

Calories.—0.2 per gram; 6 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

HOSTESS MAYONNAISE

Manufacturer.—Hostess Products Corporation, Long Island City, N. Y.

Description.—Mayonnaise in glass jars containing refined cottonseed oil, fresh egg yolk, water, cider vinegar, salt, sucrose, mustard and white pepper.

Manufacturer.—Egg yolk, salt, sugar and spices in definite proportions are beaten at high speed in a mixing machine; the oil is beaten in and then the water and vinegar. The emulsion of mayonnaise is automatically filled into glass jars. Only enough mayonnaise is manufactured from day to day to care for immediate orders.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 10.9 |
| Ash | 1.2 |
| Sodium chloride (NaCl) | 1.1 |
| Fat (ether extract) | 84.5 |
| Protein (N \times 6.25) | 0.9 |
| Carbohydrates (by difference) | 2.2 |
| Titratable acidity as acetic acid | 0.3 |
| Lecithin-phosphoric acid (P ₂ O ₅) | 0.058 |
| Unsaponifiable matter | 0.3 |
| Estimated egg yolk solids | 3.7 |

Calories.—7.7 per gram; 219 per ounce.

Claims of Manufacturer.—Conforms to the U. S. Department of Agriculture definition and standard for mayonnaise.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 5, 1933

ETIOLOGY OF HEAT CRAMPS

Talbot and Michelson¹ have recently reported studies bearing on the etiology of heat cramps. The subjects were men employed in the construction of the Hoover dam in Nevada, who, in the course of their work, were exposed to the extreme summer heat of the Colorado River basin desert. The symptoms varied from vomiting and dizziness to mild and severe cramps in the muscles of the legs, arms and abdomen and were associated in all cases with profuse sweating. Similar observations have been made by others on miners, iron workers and stokers laboring under much the same working conditions.

In the present instance, the subjects were seen soon after entering the hospital and a sample of venous blood was obtained before any treatment had been instituted. Both chemical analysis and morphologic examination of the blood were carried out and certain analyses of the urine also were made. The most striking change in the composition of the blood during heat cramp is a diminution in both the total base and the acid ions; the change is more pronounced in the latter and is accounted for largely by the drop in content of chloride. There is also a concomitant loss of water from the circulation. Treatment consisted of physiologic solution of sodium chloride either subcutaneously or intravenously and milk in quantity as the only food. After the salt and liquid had been given, both the total base and the acid ions approached the normal level of concentration in the blood; at the same time the urinalysis showed a retention of sodium chloride and of water for several days. These observations indicate that the profuse sweating incident to vigorous exertion in extreme heat results in a loss of water and sodium chloride through the skin severe enough to be reflected in the acid-base and water balance of the body.

The pathogenesis of heat cramps thus appears to be defined rather succinctly by these recent chemical studies. The loss of salt and water and the replacement

of fluid alone through intake of water diminish the osmotic pressure of the interstitial fluid. The tissues tend to lose chloride in an attempt at adjustment to the hypotonic surrounding medium, and at some level characteristic of the individual there occur the neuromuscular disturbances typical of heat cramps. Other suggestions have been made to explain the origin of this syndrome. Thus it was at various times said to result from acute muscular degeneration, from water poisoning and from temporary cessation of kidney function. However, it appears that the evidence based on studies of the water and salt balance before treatment and the resulting chemical changes provide a more tenable theory for the etiology of heat cramps. Supporting evidence is afforded in the records of prevention of this disturbance through the free use of milk and of saline drinks of various kinds. No doubt practical preventive therapy will be developed for the occupations concerned when the data on the critical level of base and chloride in the blood, the approximate extent of sweating and the salt in the food are equated on the basis of clinical statistical experience.

RECENT STUDIES OF VITAMIN C

It was to be expected that biochemists would devote themselves assiduously to the intriguing problems of the isolation and identification of the vitamins. Recent years have witnessed considerable progress in this field of research. The purification of vitamin D, for example, has proceeded to a point at which well crystallized active antirachitic substances of surprising potency have been secured. Both German and English investigators have reported the production of purified products of which 1 mg. is equivalent to 40,000 international (rat) units. From yeast, workers¹ in the department of biochemistry at Oxford have separated "crystals" that act antineuritically in the conventional pigeon test in daily doses of less than 2 gammas; that is, 0.000002 Gm. This is greater than the activity of other crystalline preparations previously described. The identification of the potent principle in these instances remains to be established.

Even more satisfactory has been the progress in the investigation of vitamin C, the antiscorbutic principle. The false hopes raised by the alleged association of this vitamin with the alkaloid narcotine have been shattered. On the other hand the evidence now seems clear that vitamin C is a hexuronic acid, more recently designated as ascorbic acid.² The distribution of vitamin C in fruits and vegetables is now generally recognized. One of the citrus fruits is commonly used to supply, through its juices, a standard solution for the estimation of antiscorbutic potency. In a quest for suitable source material for the preparation of ascorbic acid, Svirbely

1. Talbot, J. H., and Michelson, J.: *J. Clin. Investigation* 12: 533 (June) 1933.

1. Kinnersley, H. W.; O'Brien, J. R., and Peters, R. A.: *Crystalline Preparations of Vitamin B from Baker's Yeast*, *Biochem. J.* 27: 232, 1933.

2. Szent-Györgyi and Haworth: *Nature* 131: 24, 1933.

and Szent-Györgyi³ of the University of Szeged in Hungary have discovered the strong antiscorbutic properties of paprika, the Hungarian red pepper (*Capsicum annuum*). Out of its juices large quantities of ascorbic acid have been prepared and purified in a variety of chemical ways, with a yield of more than 0.5 Gm. from each liter of paprika juice. In animal experiments, 0.5 mg. of the crystalline product protected guinea-pigs—the conventional test animals—from scurvy. This affords another illustration of the remarkable physiologic potency of vitamins.

It has been known for some time that the suprarenal cortex normally contains considerable amounts of the hexuronic acid now identified as vitamin C. Recent studies⁴ have demonstrated that the content of ascorbic acid in the glands is greatly decreased under conditions that give rise to scurvy. For example, in animals fed liberal amounts of spinach, nearly a milligram of ascorbic acid per gram of the suprarenal was estimated to be present. With lowered intake of antiscorbutic foods, the content of vitamin C in the glands decreased. On a vitamin C-free diet it gradually dropped as low as 0.03 mg. per gram. The same striking phenomenon of parallelism was observed with varying intakes of ascorbic acid. These investigations suggest that there is a wide limit between health and scurvy and that animals fed on restricted amounts of the vitamin, though showing no sign of scurvy, are greatly depleted of their vitamin store. Herein probably lies the chemical explanation of so-called latent scurvy in man. It is an interesting fact that in species such as the dog and the rat, which are not susceptible to scurvy, the suprarenals are not readily depleted of vitamin C.¹

GLOMERULAR FUNCTION

The various theories proposed to account for the production of urine by the kidney involve combinations of the following factors: glomerular filtration, glomerular secretion, absorption in the tubules and secretion by the tubular epithelium. Efforts to obtain experimental evidence in support of one or the other of the theories have been limited by the extremely small size of the unit of structure involved, the glomerulus and the associated tubule. It is obvious that a simultaneous comparison of the chemical composition of the blood in the renal vessels and of bladder urine will yield little cogent information concerning glomerular function and hence the process whereby the urine is actually formed. Of particular interest, therefore, are the recent reports of Richards and his co-workers¹ in which the earlier

studies of the collection and chemical analysis of glomerular urine have been confirmed and extended. This further series of investigations seemed necessary, because the principle of glomerular filtration indicated by the earlier experiments was not unanimously supported by the studies of others.

The minute quantity of fluid that it is possible to obtain by direct puncture of the glomerulus with a capillary cannula² required the development of special adaptations of standard analytic methods. The procedures thus employed were colorimetric; the reactions are carried out in fine capillary tubes of 0.35 mm. bore. It is thus possible to make certain analyses on volumes of glomerular fluid and protein-free filtrate from blood ranging from 0.03 to 0.5 cubic millimeter containing dissolved substances in quantity from a millionth to a few hundred thousandths milligram with degrees of accuracy of the order of magnitude ordinarily attained with samples of the usual size.

Simultaneous analyses of blood and of glomerular fluid for uric acid indicate that this substance passes through the glomerulus of frogs and snakes by simple filtration. This is especially significant in the reptile, as concentration of uric acid by the glomeruli would facilitate the excretion of waste nitrogen in this species. Reducing substances were present in the same concentration in the plasma of frogs as in glomerular fluid, even after administration of phlorhizin. Likewise a determination of inorganic phosphate in the plasma and glomerular urine of frogs and salamanders showed no difference in concentration in the two fluids. After the injection of a solution of pure creatinine into frogs, the plasma and the glomerular urine contained the same amounts of this metabolite. These recent data, affirming the earlier observations on urea and chlorides, constitute impressive evidence that the elaboration of the characteristic fluid in the glomeruli from the blood consists of simple filtration or of a biologic process yielding essentially the same results as does filtration.

That not all of the vital membranes behave as does the glomerular epithelium is evident from further studies by Walker.³ He observed that in the cerebrospinal fluid of frogs and of depancreatized dogs there were 30 per cent less reducing substances and 60 per cent less inorganic phosphate than occurred in plasma. In the frog, man, fowl, dog and cat the aqueous humor likewise contains less reducing substance, urea, uric acid and phosphate than does the plasma. Lymph, on the other hand, contains inorganic phosphate and reducing substance in the same concentration as does the plasma. These observations have a significant bearing on physiologic theory and clinical practice and present another triumph of chemical methodology.

3. Svirbely, J. L., and Szent-Györgyi, Albert: The Chemical Nature of Vitamin C, *Biochem. J.* **27**: 279, 1933.

4. Harris, L. J., and Ray, Surendra N.: Vitamin C and the Suprarenal Cortex, *Biochem. J.* **27**: 303, 1933.

1. Richards, A. N.: Bordley, James, 3d, and Walker, A. M.: *J. Biol. Chem.* **101**: 179 (June) 1933. Bordley, James, 3d, and Richards, A. N., *ibid.*, p. 193. Walker, A. M., and Reisinger, J. A., *ibid.*, p. 223. Walker, A. M., *ibid.*, p. 239. Bordley, James, 3d; Hendrix, J. P., and Richards, A. N., *ibid.*, p. 255.

2. Wearn, J. T., and Richards, A. N.: Composition of Glomerular Urine, with Particular Reference to Problem of Reabsorption in Renal Tubules, *Am. J. Physiol.* **71**: 209 (Dec.) 1924.

3. Walker, A. M.: Comparison of the Chemical Composition of Aqueous Humor, Cerebrospinal Fluid, Lymph and Blood from Frogs, Higher Animals and Man, *J. Biol. Chem.* **101**: 269 (June) 1933.

Current Comment

SPONTANEOUS RUPTURE OF THE AORTA

A not infrequent cause of sudden and often instantaneous death is rupture of the aorta, a form of death too sudden to present appreciable symptoms or with symptoms so vague and of such short duration that death is explained only by postmortem examination. The exact frequency of rupture of the aorta, independent of aneurysmal sacs, is not known. While by no means frequent, it is probably more frequent than is commonly supposed. Whether under certain circumstances the normal aorta ruptures through inability to withstand the ordinary pressure within it has been the cause of much controversy. Some maintain that the undamaged aortic wall may at times be placed under such stress as to give way in sudden and fatal hemorrhage; others are equally convinced that no spontaneous rupture is possible without antecedent damage or degeneration of vascular tissue. The consensus seems to be that the rupture in most cases, though primarily due to some pathologic condition of the aorta, is immediately caused in nearly all cases, except those due to traumatic accident, by something that increases the arterial pressure. The most frequent causes are strains, sudden muscular effort, as during confinement, hypertrophy of the heart, passions, and similar incidents. Rupture occurs in the greatest percentage of cases near the heart somewhere below the arch and is intrapericardial in most instances. It is next most frequent in the curved portion of the vessel and is least frequently found in the abdominal aorta. In character the lesion falls into three groups. In the first there is complete rupture of all the coats at once, the tear in the outer coat corresponding to that in the inner coat. The interior may be smooth, and the lesion is usually rather sharp, as if cut with a knife. In the second group the inner coat ruptures sometimes before the outer, which usually gives way at one end or the other of the inner tear or at a little distance from it, there being no infiltration between the coats. The tear in the outer coat is usually at right angles to that in the inner coat. In the third group the rupture occurs as in the second but there is infiltration of blood, sometimes extensive, between the coats. In this group fall all cases of dissecting aneurysm of the aorta. To the first group belong about 65 per cent of all cases, to the second about 20 per cent and to the third about 15 per cent. The symptoms are indefinite. In the first group death is usually instantaneous and without recognizable symptoms. Pain is the most constant symptom and usually is severe, tearing and intrathoracic, radiating to the shoulder, back, neck or abdomen. Of other symptoms, dyspnea, collapse, feeble irregular pulse, vomiting, coughing and hemoptysis are occasionally noted. Death does not always take place with the initial tear, as the rupture may penetrate only the inner coat of the arterial wall and not lead to complete rupture. Then within a short time, frequently three or four days, external rupture occurs with sudden death. In some cases the interval may be longer, one of the longest

recorded intervals being thirty-nine days. Rarely, recovery may take place with the formation of a healed dissecting aneurysm. Death in the majority of such cases is due to hemorrhage into the pericardium or into the pleura or abdomen, especially when the dissecting aneurysm is extensive. There is no doubt that among the cases of sudden death attributed to heart failure a considerable number are due to spontaneous rupture of the aorta.

THE STRUCTURAL CHANGES IN HUMAN PSITTACOSIS

Knowledge of human disease is based to a large degree on the results of the study by many observers of cases as they occur here and there from time to time. This may be a slow and gradual process. It is now more than fifty years since three necropsies by Eberth on patients who had died from parrot fever, or psittacosis, were published. These three necropsies mark the beginning of the study of the structural changes in this disease. Since then reports of forty-four additional necropsies have been published. On the basis of these widely-scattered reports and of the study of five new cases from the 1929-1930 pandemic, Lillie¹ writes an instructive unified account of the pathologic anatomy and histology of parrot fever in man. The characteristic feature is an inflammatory process in the lungs, which is primarily focal or lobular in extent and apparently not closely related to the bronchioles. Even when the lesion is grossly more or less lobar, its primarily lobular nature is evident microscopically. There is nothing really distinctive in the distribution of the lesion in the lungs, which has been noted most frequently in the left lung and least frequently in the lower and middle lobes of the right lung. Usually each case presents various stages in the process. Early the exudate contains fibrin, red cells, leukocytes and alveolar cells; then the fibrin disappears, the red cells become fewer, and the leukocytes are replaced by mononuclear phagocytes and alveolar cells, which undergo degeneration and may appear to become invaded by rickettsia. In the tissue of the septums may be serous exudate and later infiltration with lymphocytes and large mononuclear cells. The bronchioles may remain clear or they may contain the same kind of exudate as the alveoli near by. There may be inflammatory changes in the pleura. In the lymph glands and the spleen, which usually is large and soft, the macrophages are increased. In the liver the Kupffer cells show increase in phagocytic activity; there may be small foci of necrosis, and in one case Lillie noted granulomatous formations like those seen in psittacotic parrots. Punctate hemorrhages may occur in the brain, serous membranes and elsewhere. In the five new cases reported by Lillie, rickettsia—minute, coccobacillary bodies (*Rickettsia psittaci*)—were demonstrated in large round cells in the exudate in the lungs. In parrots with psittacosis these bodies are found in epithelial cells (intestine, ureter, renal tubules, bile ducts), macro-

1. Lillie, R. D.: I. The Pathology of Psittacosis in Man, and II. The Pathology of Psittacosis in Animals and the Distribution of Rickettsia Psittaci in the Tissues of Man and Animals, Bull. 161, National Institute of Health, Washington, D. C. Government Printing Office, 1933.

phages and reticulo-endothelial cells. These observations naturally suggest that *Rickettsia psittaci* may be the cause of psittacosis, but no final proof of such a relationship can be offered at this time. This account by Lillie of the structural changes in human parrot fever shows how knowledge of the nature of the disease advances as opportunities to study human material with newer methods present themselves. The solution of the etiologic problem, however, requires experiments on animals.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

August 8. Grape Juice.
August 10. The Problem of Adoption.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

August 12. Analysis of Urine.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Portrait of Dr. Mabry.—A painting of Dr. Albert Gallatin Mabry, one of the first trustees of the Alabama Insane Hospitals, was recently presented to the Bryce Hospital by Mr. W. S. and Miss Virginia Mabry, son and daughter of the late physician. Dr. Mabry was associated with the early history of the hospital, having suggested the establishment of a hospital for the insane of Alabama at a meeting of the state medical association in Mobile in 1847, according to a newspaper account. At this time he was appointed to investigate the old state capitol building at Tuscaloosa, which had been vacated when the capitol was moved to Montgomery, to determine the suitability of the building for a hospital. Dr. Mabry was appointed a trustee by the governor in 1857 and served continuously until his death in 1874 at Selma. The portrait was placed in a "Hall of Fame" made up of a group of portraits of other persons distinguished in the history of the Alabama hospitals for the insane, assembled through the efforts of Dr. William D. Partlow, superintendent of the hospitals.

ARIZONA

State Department Establishes Sanitary Division.—In the reorganization of the state department of health, a division of sanitary engineering has been established with the aid of the Rockefeller Foundation, newspapers report. F. Carlyle Roberts, Jr., Tucson, who has been named state sanitary engineer with offices in the state board of health's headquarters, has already begun a survey of water supplies in the state.

ARKANSAS

Personal.—Dr. Allen B. Jemison has been appointed in charge of the departments of epidemiology, milk control and malaria control of the state department of health, effective July 1. He was recently appointed health officer in Jefferson County, succeeding Dr. George A. Hays. Dr. Herbert H. Howze, Little Rock, will replace Dr. Jemison in Jefferson County.

Medical Board Election.—Dr. William W. York, Ashdown, was elected president of the State Medical Board of the Arkansas Medical Society at its meeting in Little Rock, June 19. Dr. William T. Lowe, Pine Bluff, was named vice president and Dr. Albert S. Buchanan, Prescott, secretary-treasurer. Offices of the board have been transferred from Searcy to Prescott.

COLORADO

Dr. Meader Resigns at University.—Dr. Charles N. Meader, dean emeritus, University of Colorado School of Medicine, Denver, has resigned as head of the department of medicine, effective July 1. Dr. Meader has been connected with the school since 1912. In 1914 he was appointed instructor and in 1916, dean and professor of medicine. He resigned as dean in 1925 and was made dean emeritus. Dr. James J. Waring has been appointed professor and head of the department of medicine to succeed Dr. Meader. Other changes at the school include the appointments of Drs. Roy Parsons Forbes and Emanuel Friedman as assistant professors of pediatrics and Roderick J. McDonald, Jr., and Wilford W. Barber, instructors in pediatrics.

CONNECTICUT

Statewide Tuberculosis Campaign.—A resolution authorizing a statewide campaign against tuberculosis was adopted by the house of delegates of the Connecticut State Medical Society, May 25. Emphasis will be placed on the finding of persons with tuberculosis by a new low cost method of making roentgenograms. The plan developed from a project in New Haven in which roentgenograms were made of about 6,400 high school students in an effort to detect tuberculosis (THE JOURNAL, March 11, p. 746). In carrying out the campaign, the state department of health will furnish information to medical societies, physicians and health officers and handle information for the public, and the state tuberculosis commission will interpret the roentgenograms. Persons availing themselves of the reduced prices offered in the campaign will be expected to pay for their own roentgenograms. The interpretation of the films will be reported to local authorities, who will report in turn to the patients or patients' families. The family physician will complete the diagnosis when further study is required and a member of the state commission will be available for additional consultation. The responsibility of the follow-up work will devolve on the health officer. The program will be carried out only in those communities that request it. It is planned to begin the campaign early in the fall.

DISTRICT OF COLUMBIA

Society News.—Dr. Maude E. S. Abbott, assistant professor of medical research and curator of the medical museum, McGill University Faculty of Medicine, Montreal, Que., addressed the Washington Heart Association, April 28, on "Congenital Heart Disease." Dr. Thomas A. Claytor was elected president of the society, May 26, and Dr. James Esler, secretary.

Dr. Hickling Retires as Alienist.—Dr. Daniel Percy Hickling, for many years alienist for the district government, will be retired, September 30, and the work attached to his position will be transferred to the chief psychiatrist of the Gallinger Municipal Hospital, under an order of the district commissioners, July 21. Dr. Hickling, who has been connected with the district government more than thirty years, will reach the retirement age about two weeks before the order becomes effective. He is professor of medical jurisprudence at the National University Law School and professor of clinical psychiatry at Georgetown University Medical School.

FLORIDA

Society News.—Dr. George S. McKnight, Avon Park, addressed the De Soto-Hardee-Highlands Counties Medical Society in Arcadia, June 13, on pellagra.—The Suwanee River Medical Society heard Dr. John D. Gable, Lake City, discuss mental diseases at its meeting in Live Oak, June 9.

Financing Health Units.—The Rockefeller Foundation has given \$4,000 to the Florida State Health Department to defray in part operating expenses of health units in the state, it is reported. Since the creation of the three units in Taylor, Leon and Escambia counties, they have been operated with funds supplied on an equal basis by the federal, state and county governments. However, no provision for these funds was made in the economy program of the federal government. It was stated that the Rockefeller Foundation gift would assure the continuance of two of the units, and every effort will be made to continue the three on a full time basis.

GEORGIA

Typhoid in Atlanta.—About twenty-one cases of typhoid occurred in Atlanta recently, the *Bulletin* of the Fulton County Medical Society states. Investigation disclosed a local dairy to be the source of the outbreak and the dairyman to be a typhoid carrier. His license was revoked.

Society News.—Mr. Robert Hudgens of Emory University was elected president of the Georgia Hospital Association at its annual meeting, held in Atlanta, June 29.—Dr. William W. Anderson gave a paper on "Anemias in Infancy," before the Fulton County Medical Society, Atlanta, July 20, and Dr. Richard B. Wilson a clinical talk on "Air Encephalography and Diseases of the Nervous System." Dr. John D. Martin, Jr., presented a case report on reconstruction of the lower lip. Dr. William W. Young addressed the society, July 6, on "Recent Advances in Psychiatric Education," and Dr. Henry R. Donaldson gave a clinical talk on "Vaccine Therapy Treatment of Typhoid Fever."

ILLINOIS

Free Examinations at State Fair.—The Sangamon County Medical Society and the state department of health will make free tuberculin tests and roentgen examinations on a limited number of children at the Illinois State Fair in Springfield, August 19-26. According to the state department of health, this project is undertaken as a demonstration of the use and value of the Mantoux skin test and the x-rays in the early diagnosis of tuberculosis. Children between 5 and 16 years old, whose parents or guardian request it, will be accepted for the test and examination. Children brought to the fair for the test will be provided with admission tickets to the grounds and asked to return two days later for a reading of the test. It is planned to roentgenograph immediately those with positive tests. It is to be emphasized particularly, the announcement states, that a positive test does not necessarily mean active tuberculosis. Physicians of the state are invited to send to the fair any of their patients whom they wish to have tested and examined.

INDIANA

Personal.—Dr. Richard Schillinger, Richmond, has replaced Dr. Louis F. Ross as medical superintendent of the Richmond State Hospital, it is reported.

Child Health Conferences.—Two hundred and seventy-six children were examined by members of the Shelby County Medical Society in a series of conferences conducted throughout the county, recently. The conferences revealed that less than 9 per cent of the children had been immunized against diphtheria and a smaller percentage had been vaccinated against smallpox. As a result, an active immunization campaign is planned in the county by committees of the medical society, the county tuberculosis association and the Red Cross, which were the cooperating agencies in the fourteen conferences. Lay committees handled the clerical work and graduate nurses donated their services at the conferences.

Program for Child Health.—In a news item concerning the work of the department of child health and maternal welfare of the Indiana State Board of Health published in *THE JOURNAL*, July 29, page 372, it should have been stated that this work is to be done through the organization of the Indiana State Medical Society, with approval and participation of the county medical societies. District chairmen appointed by Dr. Oscar N. Torian, chairman of child health, are to be key men in obtaining cooperation of the county societies in their districts. It is the purpose of the plan that each county society shall educate its own citizens in child health. According to officials of the state medical society, the plan goes into effect in any locality only on the request and with the approval of the local county medical society.

IOWA

Society News.—Dr. Walter C. Alvarez, Rochester, Minn., addressed the Black Hawk County Medical Society, June 8, on "The Doctor and His Family."—At a meeting of the Clinton County Medical Society, June 1, Dr. Franklin R. Peterson, Iowa City, spoke on "Diseases of the Spleen."—Dr. Andrew B. Rivers, Rochester, Minn., discussed "Causes of the Vomiting of Blood" before the Floyd County Medical Society in Charles City, recently.—The Johnson County Medical Society was addressed, June 7, by Drs. William F. Boiler, Iowa City, and Granville A. Bennett, Boston, on "Treatment of Acute Otitis Media" and "Degenerative Changes in Joints Resulting from Continued Trauma and Increasing Age, and Their Relationship to Hypertrophic Arthritis," respectively.

—Veterinarians of the county presented a symposium on diseases transmitted by animals to man before the Mills County Medical Society in Glenwood, June 22.—Dr. Joseph B. Vanderveer, Philadelphia, talked on "The Electrocardiogram as an Aid to the Diagnosis and Treatment of Heart Affections" before the Scott County Medical Society in Davenport, June 6.—Dr. Andrew J. Smith, St. Joseph, Mo., conducted a skin clinic before the Taylor County Medical Society, recently, and Dr. Willard C. Proud, St. Joseph, spoke on "Conditions Affecting the Eye, Ear, Nose and Throat."—The sixtieth annual meeting of the Des Moines Valley Medical Society was held in Ottumwa, June 20. Speakers included Drs. Harry C. Willett, Des Moines, on "Lesions of the Lips," and George B. Crow, Burlington, "Heart Diseases."—The Southwest Iowa Postgraduate Medical Society was addressed in Red Oak, June 1, by Drs. Edwin Davis, Omaha, on "Advantages and Disadvantages of Transurethral Prostatic Resection as Compared with Prostatectomy," and Aldis A. Johnson, Council Bluffs, on "Mistakes in Diagnosis and Why We Make Them."—Dr. Frederick A. Willius, Rochester, Minn., was among the speakers at the summer meeting of the Upper Des Moines Medical Society at Lake Okoboji, June 29; his subject was "Carcinoma of the Urinary Bladder."

MICHIGAN

State Stops Distributing Some Products.—The state department of health, July 1, discontinued the distribution of bacteriophage as well as scarlet fever toxin for active immunization and the Dick test. The Kahn test will be available for state institutions and charitable organizations only. The restriction was necessary because of a marked reduction in the budget of the department. Other services and preparations will be continued as usual.

Dr. Peterson Retires from Active Practice.—Dr. Reuben Peterson, emeritus professor of obstetrics and gynecology, University of Michigan Medical School, Ann Arbor, retired from active practice on his seventy-first birthday, June 29. Dr. Peterson became associated with the medical school in 1901 as professor of obstetrics and gynecology, a position he filled until 1931, when he retired with the title of emeritus professor. He was medical director of the University of Michigan Hospital from 1911 to 1918. Early in his career he was connected with the Post-Graduate Medical School of Chicago, 1898-1901, as professor of gynecology, carrying a concurrent appointment as assistant professor of obstetrics and gynecology at Rush Medical College. He was medical adviser to the governor of Michigan from 1917 to 1919 and president of the Michigan State Medical Society in 1915 and of the Washtenaw County Medical Society in 1902. Dr. Peterson is the author of many articles on his specialty. At the recent annual session of the American Medical Association in Milwaukee, Dr. Peterson was made an honorary Fellow.

MINNESOTA

Court Vacates Charter of Medical Corporation.—Judge John W. Boerner filed an order, June 2, vacating the charter of the Pioneer Mutual Health and Benefit Insurance Company of Minnesota, which had been organized in St. Paul apparently for "maintaining a health service or insurance." So-called policies of insurance were issued whereby the holder and others would get medical, surgical and dental services for \$1.50 a month by consulting physicians, surgeons and dentists employed by the company. The Minnesota State Board of Medical Examiners, believing the plan to be in violation of the law so far as the furnishing of medical and surgical services is concerned, instituted court proceedings.

MISSOURI

Personal.—Dr. Lawrence T. Post has been appointed head of the department of ophthalmology of Washington University School of Medicine, St. Louis, on a part time basis.—Dr. Benjamin A. Wilkes has resigned as superintendent of the Southeast Missouri Hospital, Cape Girardeau; he will be succeeded by Mr. T. J. McGinty.

Health Department Reorganized.—The St. Louis Health Department was recently reorganized to centralize and coordinate more closely the various services. All activities of the department, with the exception of secretarial service and popular health education, will be grouped under four sections: medical, dental and nursing; laboratory; food control, and sanitary sections. The medical, dental and nursing section includes services in communicable disease, tuberculosis, venereal disease, child hygiene, prenatal care, public health nursing, dentistry and health center clinics. Dr. Paul J. Zentay, St.

Louis, instructor in clinical pediatrics, Washington University School of Medicine, has been appointed in charge of this division. Other appointments include the following:

J. S. Koen, D.V.S., formerly chief meat inspector, to chief of food control section.

Mr. W. Scott Johnson, Jefferson City, chief sanitary engineer.

Dr. Alfred L. Kavanagh, chief of venereal clinic.

Ernest C. McCulloch, D.V.M., supervisor of milk control.

In addition to the coordination within the department, a closer cooperation with physicians in private practice and with the medical schools and health organizations is planned.

MONTANA

State Medical Election.—Dr. Byron L. Pampel, Livingston, was installed as president of the Medical Association of Montana at its annual meeting, July 11-13. Dr. Charles E. K. Vidal, Deer Lodge, was chosen president-elect, and Dr. William E. Long, Anaconda, named vice president. Dr. Elmer G. Balsam, Billings, was reelected secretary. The next annual session will be held in Helena, July 11-12, 1934.

NEW YORK

Society News.—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, addressed the summer meeting of the Medical Society of the County of Chautauqua, August 2, at Chautauqua Institution, on "Follies of Socialized Medicine." Dr. Marshall Clinton, Buffalo, addressed the society, June 21, on abdominal emergencies.—Drs. James R. Goodall, Montreal, and Edward K. Cravener, Schenectady, addressed the Medical Society of the County of Franklin, Saranac Lake, June 9, on "Ovarian Dysfunction" and "Lumbar and Sacral Pain," respectively.

Health at Schenectady.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a population of 37 million, for the week ended July 22, indicated that the highest mortality rate (17.8) appeared for Schenectady and the rate for the group of cities as a whole, 9.5. The mortality rate for Schenectady for the corresponding period last year was 7 and for the group of cities, 10.8. The annual rate for eighty-five cities for the twenty-nine weeks of 1933 was 11.3, as against a rate of 11.8 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas or have large Negro populations may tend to increase the death rate.

Begin Work on Saratoga Spa.—The ceremony of laying the cornerstone of the Hall of Springs, the first building in the program of development of Saratoga Springs as a state-owned spa, was held, July 12. Bernard M. Baruch, New York, who was chairman of the Saratoga Springs Commission which planned the present development, laid the cornerstone and Gov. Herbert H. Lehman made the principal address. The Hall of Springs will be 160 feet long and 70 feet wide, with a high arched roof enclosing three of the principal medicinal springs. Marble counters will surround the fountains, from which attendants will serve the water at prescribed temperatures. The group of buildings will finally include a sanatorium, bath houses, a bottling plant for the waters, a gymnasium and a new unit of the laboratory and administration building, all of which are to be finished by Jan. 1, 1936. Beginning of the work was made possible by a loan of \$3,200,000 from the Reconstruction Finance Corporation in June.

New York City

Society News.—Bronx physicians whose names appeared in the list of approved radiologists published by the Council on Medical Education and Hospitals of the American Medical Association recently organized the Society of Approved Roentgenologists of Bronx County. The purposes of the organization were announced to be: to remove abuses connected with practice of the specialty, to strive for high scientific standards and to promote mutual cordiality among members and between them and the medical profession in general. Dr. Samuel F. Weitzner is president and Dr. Jacob Fierstein, secretary.

NORTH CAROLINA

Johnson Medical Building Completed at Wake Forest.—The William A. Johnson Memorial Medical Building at Wake Forest College School of Medicine, a gift of the family of Dr. Johnson, who was killed in an automobile accident in 1927, has been completed and turned over to the school. The new \$60,000 structure is three stories high and contains adequate teaching and research facilities. Dr. Johnson received his academic degree at Wake Forest and after graduating from the University of Pennsylvania School of Medicine in 1925 returned to his alma mater as professor of anatomy, which position he occupied at the time of his death.

OKLAHOMA

Extension Course.—The extension division of the University of Oklahoma sponsored a course of weekly lectures at El Reno recently. Instructors and their subjects were:

Dr. Thomas P. Sprunt, Baltimore, Arterial Hypertension and Arteriosclerosis.

Dr. William S. Middleton, Madison, Wis., Diagnosis and Treatment of Lobar Pneumonia.

Dr. Newton S. Stern, Memphis, Coronary Disease: Its Recognition and Management.

Dr. Paul L. Schroeder, Chicago, Mental Hygiene of Infancy and Childhood.

Dr. Henry F. Helmholz, Rochester, Minn., Diseases of the Urinary Tract in Childhood.

Dr. Peter T. Bohan, Kansas City, Use of Drugs in Heart Failure.

Dr. Horton R. Casparis, Nashville, Tenn., Infant Feeding.

PENNSYLVANIA

Society News.—Drs. Edward Weiss and Temple S. Fay, Philadelphia, addressed the Clearfield County Medical Society at a meeting at the Crystal Springs Rod and Gun Club, near Clearfield, July 13, on "Cardiac Neuroses" and "Surgical Treatment of Brain Injuries," respectively.—Dr. Ralph M. Tyson, Philadelphia, addressed the Luzerne County Medical Society's Hazleton branch, in June, on acute anterior poliomyelitis.—Dr. Truman G. Schnabel, Philadelphia, discussed treatment of anemias before the Northampton County Medical Society, Easton, June 16.

Philadelphia

Alvarenga Prize Awarded.—The College of Physicians of Philadelphia announces that the Alvarenga Prize, amounting to about \$300, has been awarded to Drs. Harry Shay and Jacob Gershon-Cohen, Philadelphia, for their essay entitled "Experimental Studies in Gastric Physiology in Man." The authors of the winning essay are graduates of the University of Pennsylvania School of Medicine, Dr. Shay in the class of 1921 and Dr. Gershon-Cohen, the class of 1924. The former is a specialist in internal medicine and the latter in roentgenology. The Alvarenga Prize essay may be on any subject in medicine and must represent an addition to the knowledge and understanding of the subject based on either original or literary research. It was not awarded in 1932.

SOUTH DAKOTA

Cancer Campaign Planned.—At the recent annual meeting of the South Dakota State Medical Association the cancer committee of the association was authorized to engage in an educational campaign to further the diagnosis and treatment of cancer in cooperation with the American Society for the Control of Cancer. It was recommended that the facilities of all available educational agencies be concentrated for an initial period of one year on the subject of cancer of the breast. Members of the cancer committee are Drs. William R. Ball, Mitchell; Jesse D. Whiteside, Aberdeen, and Nelius J. Nessa, Sioux Falls.

TEXAS

Personal.—Dr. John H. Foster, Houston, president of the State Medical Association of Texas for 1932-1933, received the honorary degree of doctor of science at the June commencement of Southwestern University, Georgetown, his alma mater.

Society News.—At a meeting of the Brooks-Duval-Jim Wells Counties Medical Society in Alice, June 21, Dr. Carroll F. Crain discussed roentgen diagnosis of diseases of the chest and Dr. Charles W. Skipper, Corpus Christi, syphilis.—Drs. Wilson D. Anderson, Sanatorium, and Clifford T. Womack, San Angelo, among others, addressed the Mason-Monard-McCulloch Counties Medical Society in Brady, June 7, on "Phrenic Resection in Treatment of Pulmonary Tuberculosis" and "Spinal Anesthesia," respectively.—Speakers at the June meeting of the Dallas County Medical Society were Drs. Paul H. Duff, on treatment of empyema; Richard L. Nelson, lead poisoning in children, and Elza M. Perry, Dallas, polyneuritis and vitamin deficiency.—Drs. Milford O. Rouse and Thomas H. Cheavens, Dallas, addressed the Henderson County Medical Society, June 5, on treatment of peptic ulcers and syphilis of the nervous system, respectively.—Dr. Newton H. Bowman, Mercedes, among others, addressed the Hidalgo County Medical Society, Edinburg, June 8, on diagnosis of ocular paralysis.—Dr. Cleve C. Nash, Dallas, presented a paper on "Injuries of the Head and Their Treatment" before the Denton County Medical Society, Denton, June 8.—Dr. Wilmer L. Allison, Fort Worth, was among the speakers at a meeting of Tarrant County Medical Society, Fort Worth, June 5, on "Newer Theories Regarding the Cause and Treatment of Epilepsy."

WASHINGTON

Personal.—Dr. Albert E. Stuhlt, director of the State Department of Health, Seattle, for the past eight years, has been appointed surgeon of the American Mail Line.—Dr. Marinus W. Conway, Cheney, has been appointed superintendent of Eastern State Hospital for the Insane at Medical Lake.—Dr. Leslie A. White, Seattle, has recently gone to Metlakatla, Alaska, to take charge of the medical service of an Indian station.—Dr. Roger L. Hickman has resigned from the Yakima Indian Sanatorium, Toppenish, to become associated with the Western Oklahoma Tuberculosis Sanatorium, Clinton.—Dr. Paul L. West, Wenatchee, has resigned as health officer of Chelan County after nine years' service.

WEST VIRGINIA

Child Health Conference.—Dr. Moritz F. Petersen, Charleston, was appointed chairman of a continuation committee following the state conference on child health and protection held in Charleston in May. West Virginia was the twenty-eighth state to hold such a conference along the lines of the White House Conference held in Washington in 1930. The continuation committee will seek a plan whereby the work of child welfare organizations in the state can be coordinated. Dr. George M. Lyon, Huntington, organized the conference. Among physicians who took part were Drs. Delivan A. MacGregor, Wheeling, president of the West Virginia State Medical Association; David Littlejohn, Charleston, then acting state health officer; Robert C. Hood, Clarksburg; John T. Thornton, Wheeling, and William Byrd Hunter, Huntington.

GENERAL

Change in Status of Licensure.—The Rhode Island Public Health Commission has reported the following revocation:

Dr. John B. Coffey, Providence, license revoked in February under the state narcotic law. He is at present serving a term in the Providence County jail on conviction of failure to keep records of drugs dispensed. This license had previously been revoked, but an appeal to the supreme court which had never been heard prevented the revocation from becoming effective.

Woman's Journal Enlarges Scope.—With its June issue the *Medical Woman's Journal* broadened its activities to include the work of women in allied scientific fields and adopted the name *Medical and Professional Woman's Journal*. Interests of dietitians, dentists and women in public health work are presented in special departments. There will also be a department of medical jurisprudence.

Prizes for Research on Mental Disease.—The Eugenics Research Association, Cold Spring Harbor, N. Y., is offering a prize of \$3,000 and another of \$1,000 for original research on the inheritance of mental disorders. Only white persons are to be studied, and family history of about 100 years should be considered. Two years will be allowed for the research; typewritten reports are to be submitted to the association on or before July 1, 1935. The announcement emphasizes that the probability of commitment to an institution is the criterion on which the research must hinge.

Study Public Health Problems in Europe.—Two health officers are members of a party of municipal executives from various American cities who will spend six weeks in Germany and Austria studying public health conditions and problems, it is reported. The physicians are Drs. John L. Rice, health officer of New Haven, Conn., and George C. Ruhland, health officer of Syracuse, N. Y. The party includes a mayor, a city manager, a police chief, a city engineer, a park executive and other municipal executives. The trip has been made possible by the Carl Schurz Foundation of the Oberlaender Trust, a Philadelphia organization established for the promotion of cultural relations between the United States and German speaking countries.

Society News.—Dr. Agnew H. Hilsman, Albany, Ga., was elected president of the Chattahoochee Valley Medical and Surgical Association at its annual meeting in Albany, July 12, succeeding Dr. Seale Harris, Birmingham, Ala. Dr. William J. Love, Opelika, Ala., was reelected secretary.—A resolution requesting the U. S. Public Health Service to take measures to prevent introduction of psittacine birds into the United States was adopted by the western branch of the American Public Health Association at its annual meeting in Pasadena recently. The resolution declared that the appearance of psittacosis in California and other Western states had established a distinct menace to public health and urged continuance of the investigations of the disease which have been under way in California for the past year.—Dr. Jean P. Pratt, Detroit, was elected president of the Association for the Study of Internal Secretion at its annual meeting, June 13, and Dr. Francis M. Pottenger,

Los Angeles, reelected secretary. The next annual session will be held in Cleveland.—At the annual meeting of the Medical Library Association, June 19, Miss Marcia C. Noyes, Baltimore, was elected president, and Miss Marjorie J. Darrach, Detroit, reelected secretary. The next annual session will be held in Baltimore.—The annual meeting of the Association of Military Surgeons will be held in Chicago, September 25-27, under the presidency of Dr. Ralph C. Williams, Washington, D. C.—Dr. George A. Dowling, Seattle, was named president-elect of the Pacific Northwest Medical Association at the annual meeting in Vancouver, B. C., in July. The 1934 session will be held in Salt Lake City.

Funds Needed—Anatomy of Lung.—Dr. Lawrason Brown, Saranac Lake, N. Y., is sending to interested physicians a letter asking for contributions to a fund to finance the publication of the work of Dr. William Snow Miller, Madison, Wis., on the anatomy of the lung. Dr. Miller has much of the material, including a number of plates, Dr. Brown's letter says, but he requires about \$3,000 to enable him to get the manuscript ready for the publishers by Jan. 1, 1934. This sum would be spent as follows: \$2,500 for the services of a secretary and an artist and \$500 for Dr. Miller's living expenses. Because of financial reverses Dr. Miller, now 76 years old, is unable to do this work without outside aid. Dr. Brown's letter concludes:

I was impressed with the opportunity which presented itself to American medicine, for here almost within our grasp lay what we might consider to be a classic. It is for this reason that I am writing to ask your immediate aid in the form of a small contribution and possibly a few others from some of your friends and acquaintances. The appeal is urgent. Father Time is no laggard. I shall be glad to act as treasurer of the fund.

Dr. Brown's address is 24 Church Street, Saranac Lake, N. Y.

FOREIGN

New Medical Buildings.—Kings College Hospital Medical School, London, recently opened several new buildings, completing a program interrupted by the World War. They include a teaching museum, a dental museum, a biochemical research laboratory, and a refectory hall provided with a stage which will make it adaptable for meetings and school ceremonies.

Society News.—The Medical Association of South Africa will hold its annual meeting at the University of Capetown, Groote Schuur, September 25-30. Dr. Edward Barnard Fuller is president. Three morning plenary sessions will be held at which discussions will be held on "Diet in Relation to Health in South Africa," "Maternal Mortality in Urban and Rural Areas" and "Medicolegal Problems of General Practice." Alternate mornings will be given over to section meetings and the afternoons to business meetings, a golf tournament and special excursions. The president's garden party will follow the annual business meeting the third day of the meeting.—The directorate of the German Physiologic Society has decided to cancel the session that was to have been held in Innsbruck in September.

International Congress on Cancer.—An International Congress for the Scientific and Social Fight Against Cancer will be held in Madrid, October 25-30. Subjects to be discussed by the scientific section are: biology of the cancer cell, early diagnosis, treatment of cancer and tumors of the nervous system. Subjects for the social section are: occupational cancer, statistics of cancer, organization of a permanent international bureau and public education against cancer. Official languages of the congress are English, French, Spanish, German and Italian. Further information may be obtained from Dr. Julio Bejarano, general secretary, Atocha 104, Madrid. Newspapers report that Drs. James Ewing, New York, and Francis C. Grant, Philadelphia, have been appointed delegates to represent the United States.

Memorial to William Harvey.—The tower of Hempstead Church, Essex, where William Harvey and members of his family are buried, is to be partially restored after lying in ruins for fifty years, the *British Medical Journal* reports. Lord Dawson of Penn, president of the Royal College of Physicians, laid the foundation stone, July 7, for the new tower, which will be known as Harvey Tower. In 1882 the church tower fell suddenly and the damage has never been repaired. The College of Physicians in 1883, feeling that the remains of Harvey should be more fittingly cared for, removed the leaden shell containing his body from the Harvey vault, which had fallen into disrepair, and placed it in a marble sarcophagus in the Harvey chapel, a part of the church originally built by members of the family. Within the last few years a committee of representatives of the medical profession and the parishioners of Hempstead has raised sufficient funds to finance rebuilding of part of the tower. It remains to find funds for the restoration of the ringing room and the belfry.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 15, 1933.

Cancer Research

Years ago it was discovered that shale workers in the Scottish coal fields developed warts on their hands, which tended to become cancerous. In the research department of the Cancer Hospital, London, the cancer-producing substances of shale, tar and paraffin were investigated and the work has now been brought to a successful conclusion. Mr. Hieger, a member of the staff, has succeeded in isolating from coal tar a cancer-producing body of great virulence and, moreover, has prepared this body synthetically. It is a hitherto unknown hydrocarbon; namely, 1:2 benzopyrene. Five benzene rings are united in the molecule in a particular manner. This substance is to be distinguished from another cancer-producing substance prepared synthetically at the Cancer Hospital some time ago (1:2:5:6 dibenzanthracene). Work is now proceeding on the possible relation of these substances to compounds that occur in the tissues of the body. Light on the subject is being sought by means of x-ray crystallography. Working at the Royal Institution, Dr. J. M. Robertson has shown that dibenzanthracene differs from anthracene, which is not cancer producing, in ways that were not otherwise apparent.

At the Cancer Research Laboratory of the London Hospital, Dr. Lumsden, the honorary director, has made therapeutic researches. In 1925 it was first shown that antisera capable of destroying cancer cells could be produced. The first attempts to cure an animal by injecting antiserum failed, but by 1932 it could be reported that mice were cured in a large percentage of cases. These mice were in future immune to experimental cancer. Some of them are now living and have been free from recurrences for nearly a year; i. e., a period equivalent to something like thirty or forty years in the life of a man. The results, gradually but progressively attained, all confirming the hypothesis on which ten years ago the research was based, have led at last to the final test on man. Twenty-five patients suffering from cancer in a hopeless form have voluntarily placed themselves under antiserum treatment. It is not considered expedient at this early stage to publish even the provisional conclusions. But the results are considered to justify further and intensive investigation along these lines, and the Cancer Campaign has provided the necessary funds. The annual report of the British Empire Cancer Campaign describes this research.

The Profession's Control in a State Medical Service

Mr. Somerville Hastings, a laryngologist, delivered his presidential address to the Socialist Medical Association on the extent to which physicians should be heard in the administration of a state medical service. He referred to the fact that for many years the state and the local authorities had been undertaking to supply the medical needs of part of the population. To what extent ought the physicians, who were whole or part time government servants, to have a controlling voice in the services they were administering? Mr. Hastings referred to the recent dispute between the London County Council and the British Medical Association concerning the conditions of service of the consultants about to be employed. The association claimed that it should have been consulted about the condition and have some voice in the selection. Much of the medical work of the Council was carried out by committees composed of medical officers of their hospitals and other ser-

vices who issued reports to the health officer of the council. He transmitted these, with any modification he thought necessary, to the public health committee. The system seemed to work well in practice, but it was open to the theoretical objection that the only official communication was through the very narrow bottle-neck of the health officer. In the voluntary hospitals the most diverse conditions were found. Some of the smaller voluntary hospitals were completely controlled by the medical staff. On the other hand, in some of the larger hospitals the staff had no control whatever. In some they had representatives on the committee of management.

Mr. Hastings enunciated principles as to the amount of control to be given to workers in a state medical service: 1. They must have the sole voice in determining the type of treatment for each patient. 2. The public authority employing a medical officer must have the sole voice in his appointment. But a physicians' union should keep careful watch on salaries, hours and other conditions of employment and consult with the public body responsible. 3. The physicians employed or their representatives must have direct access to those administering the medical service. 4. They must have power to tender advice as to the development of the service.

Scottish Vital Statistics

Like England, Scotland continues to record a constantly falling birth rate. The report for 1932, just published, shows that the birth rate was 18.6 per thousand, again the lowest on record. The death rate was 13.5, compared with 13.26 in 1931. Infant mortality was 86 per thousand births, compared with 82 in 1931 and an average of 85 for the previous five years. But the tuberculosis death rate reached a record low figure of 84 per hundred thousand of population, compared with 87 in 1931. The birth rate now is only approximately half the maximum recorded (35.62 in 1876). In a discussion of the causes of the decline, it is pointed out that it cannot be explained by diminution of the marriage rate or increase of the average age on marriage. The average age on marriage from 1861 to 1901 shows little variation—from 27.2 to 27.5 years. Since 1901 there has been a slight tendency to increase, the average age in 1930 being 27.8 years. The decline in the birth rate started in 1876, while the tendency to increase in age at marriage is much more recent. Moreover, the married population at the censuses of 1901, 1911 and 1921 were, as regards age, more favorably constituted for a high birth rate than in 1885.

Lack of Milk a Cause of Tuberculosis

The Tyneside towns of Jarrow and Blaydon have each a working class population of about 32,000 and show an equal amount of overcrowding, but the tuberculosis death rate for the former is about 2 per thousand and for the latter about 1 per thousand. The National Association for the Prevention of Tuberculosis therefore investigated the matter. It was found that there were more poor families in Jarrow than in Blaydon. In the latter there are many married miners living in houses provided by the colliery owners, which are rent free—a great advantage during unemployment. The association of poverty with tuberculosis was thus manifested. In keeping with this, it was found that undernutrition was greatest in the tuberculous families. They consumed more bread but less meat, butter and milk than nontuberculous families. The shortage of milk in the diet was even greater than that of meat. It was suggested that the shortage of milk was possibly more important than undernourishment and that vitamins, enzymes or some unknown constituents of fresh milk played a part in the body's defense against tuberculosis. A racial factor entered into the etiology, for the incidence of tuberculosis was higher among the large Irish population in Jarrow. This higher rate could not be

entirely explained by inferior conditions of life. It was estimated that they made the death rate 31 per cent higher than it would have been in their absence. The practical conclusion was that the use of fresh milk, especially for children, should be regarded as a daily necessity in poor families. The neglect of milk was not simply a matter of poverty, for its use was more neglected than that of meat, though that is more expensive.

Council of the British Medical Association Condemns Dichotomy

At a meeting of the council of the British Medical Association, the following resolution was proposed, for the Central Ethical Committee, as a recommendation for the representative body: "That in the opinion of the representative body the practice of fee splitting, commonly called dichotomy, an arrangement between two practitioners whereby, unknown to the patient, one practitioner receives part of the fee due to the other, is really a secret commission, unlawful and highly detrimental to the honor of the medical profession." The subject originated in an anonymous letter to the *Lancet*, in which a consultant complained that he was forced by physicians to submit to the practice of dichotomy. An editorial followed in the *British Medical Journal* dissociating the profession from any countenance of the practice. Then the president of the General Medical Council condemned it as a contravention of an act of parliament which made secret commissions illegal. The council of the British Medical Association agreed to the recommendation, with omission of the reference to the illegality of a secret commission.

PARIS

(From Our Regular Correspondent)

June 14, 1933.

The Treatment of Accidental Asphyxiation

The city of Paris has a well organized fire department. Calls may be turned in from private telephones or from any one of the many special boxes located in the streets. These street boxes are now to be used also in summoning aid from a new service created to aid persons who have become accidentally asphyxiated by carbon monoxide, electrical shock, hanging and submersion; that is, persons discovered apparently dead, except cases resulting from disease or traumatism. In response to such calls, an ambulance is sent out with special equipment and one or two members of the special service of the prefecture of police, trained in the treatment of asphyxiation: artificial respiration by the Schäfer method; use of the inhalator mask, with a pouch containing oxygen and a 5 per cent admixture of carbon dioxide; and, finally, the vehicle to transport the victim to a hospital in case first aid should not prove sufficient.

The organization of this service is due to Lieutenant-Colonel Cot, M.D., who resigned from the army to become the director of this municipal service. His military career had brought him to Paris as chief physician of the fire department. The firemen are often exposed to asphyxiation in the basements of burning buildings. Dr. Cot improved the masks with which the firemen were equipped and studied the developments in the technic of resuscitation, visiting institutions in France and foreign countries. He introduced the use of the Henderson gas mixture and the mask, replacing the pure oxygen administered with the aid of a balloon and a rubber tube. He formed classes in the technic of resuscitation for the benefit of the firemen and policemen. The work of the pupils of Dr. Cot, confined to first aid, has led to saving the lives of more than 500 victims in the past two years. The municipalities near Paris are beginning to imitate this example, and twenty of them have organized for their police force a course of instruction. If, however, the case is grave, the intervention of the

physician becomes necessary. Dr. Cot has published, for the use of physicians, a number of important brochures in which he discusses the best forms of technic.

The Effect of Tobacco on the Heart

Laubry, Deglaude and Walser have taken up again experimentally the old question of the effects of tobacco on the heart, studying them on an isolated heart of a rabbit. This research shows that the output of the heart varies directly with the output of the coronary arterial system. An infusion of tobacco and a solution of nicotine, if they contain the same amount of nicotine, exert the same effects on the coronary output. Small doses of nicotine provoke constantly an increase of the coronary output (from 30 to 60 per cent of the initial figure). Moderate doses of nicotine provoke a constant augmentation of the coronary output (from 5 to 20 per cent of the initial figure). Strong doses of nicotine provoke in a constant manner a diminution of the coronary output (from 10 to 20 per cent of the initial figure). Nicotine exerts, therefore, experimentally a strong vasodilative action in weak doses and a weak vasoconstrictive action in strong doses. An approximate calculation showed the authors that the probable concentrations of nicotine in the blood of ordinary smokers (from ten to twenty cigarettes a day) correspond to the weak and moderate doses of their experiments. If it is permissible to apply these experimental data to the clinical aspects, it would seem that, in the mechanism of the attacks of angina associated with tobacco intoxication, the influence of the coronary vasoconstrictive factor is nil or negligible, whereas the toxic action on the nerve elements of the cardiac plexus is paramount. The evils of tobaccoism must therefore be associated with chronic intoxication of the autonomic cardiac motor system. The vascular spasms are plainly evident; their influence on the retinal circulation is likewise observed. But their effect on arterial pressure and on the myocardium is slight. The physician can therefore assume a tolerant attitude toward the moderate use of tobacco in persons who experience no inconvenience from it.

Erythemas Due to Medicines

Mr. Milian, of the dermatologic services in the Hôpital St. Louis in Paris, has reported his comprehensive research on erythemas due to medicines. These erythemas should not be attributed, as they usually are, to an intoxication, because they do not produce phenomena characteristic of intoxications (vasomotor disorders, edemas and the like); these are infectious erythemas brought out by the medicament. They are scarlatiniform, morbilliform or rubeoliform, and in each variety, from the ninth day on, there develop febrile and functional symptoms analogous to the eruptive disease of which it is the type. Thus, in scarlatiniform erythema one observes sore throat, headache, vomiting and a temperature of 40 C. (104 F.); in morbilliform erythema one notes conjunctivitis and the like. On the ninth day, independent of the erythemas, there may appear other infectious manifestations: sore throat, coryza, acute articular rheumatism and the like. These erythemas are therefore only attenuated eruptive fevers, developing in persons with latent micro-organisms, half, or at least partially, immunized. When they appear in the immediate vicinity of persons who are not immune—infants, for example—they may infect them with measles or scarlet fever.

Refusal of Students to Take a New Examination

A ministerial decree issued eighteen months ago, on the advice of the superior council of public instruction, provided for a new examination at the end of the second year in medical school, the examination to comprise a written composition on anatomy and physiology. The superior council had acted in response to a desire of the medical syndicates to see the studies for the degree of doctor of medicine made more

difficult, in order to diminish the number of physicians. A written composition would make it possible to avoid favoritism on the part of examiners. The ministry did not announce the introduction of the new examination until two months before the date set for the test. The delayed notice caused excitement among the students of Paris, and they decided to refuse to present themselves for examination. The students of Montpellier, Nancy, Strasbourg and other universities imitated their example. Their principal complaint was that the new rules should be applied only to the new students and not to those who had begun their studies under previous requirements. The minister would not relent and a number of deputies intervened before the tribunal of parliament in order to question the minister and to ask his indulgence for the culprits. The minister finally consented to postpone the examination until next October. The excitement among the students has not been allayed. They are convinced that the project contemplates adding a sixth year to their studies. The minister finds himself in an embarrassing position.

BERLIN

(From Our Regular Correspondent)

June 26, 1933.

Changes in Management of Medical Profession

The Aertzvereinsbund, a syndicate of the medical profession which controlled the professional policies, and the Hartmannbund, a syndicate which dictated the economic policies, were until recently under the sole direction of Geheimrat Sanitätsrat Dr. Stauder in Nuremberg. After the Aertzvereinsbund had opposed, a few months previously, bringing the medical profession under political influence, and after stormy altercations between the syndicates and the physicians associated with the national-socialist party, the latter and these two syndicates finally divided the administrative offices between them. The duties of chairman were then performed jointly by the chairman of the national-socialist physicians, Dr. Wagner of Munich, and by Dr. Stauder. Physicians who had become dissatisfied with Stauder's attitude have been desiring his resignation, but nothing happened until recently, when suddenly he announced his determination to resign. The new political developments, Stauder states, have prepared the way for a unified organization. He said it was a mistake to continue longer the duumvirate—on the one hand the interjected commissar Dr. Wagner, who enjoys the confidence of the federal government, and, on the other hand, the regular chairman, who is bound by law and the constitutions of the leagues and is responsible for all transactions of a legal or financial nature. Dr. Wagner will now be the sole occupant of the office of chairman until the new election is held. His position has been approved by the government. Whether the Aertztag, the annual convention of these two leagues, which was postponed a few months ago, will be held at all, this year, is doubtful.

Eugenic Sterilization

In a recent letter it was mentioned that the attitude of representatives of the medical profession toward eugenic sterilization has undergone a change. In the meantime, the new government has issued a public statement. The Prussian minister of the interior has announced that the council on health has drawn up a bill as the basis for deliberations throughout the reich. Sterilization for medical reasons is already permitted. The new bill concerns sterilization for eugenic reasons but not for social reasons. According to statements issued by the ministry, it is possible that this law will go beyond voluntary sterilization. It is a question whether a physician can be required to sterilize a human being who is opposed to such a procedure. Some contend that the eugenic purification of the body politic through sterilization is the work of generations.

Professor Muckermann, director of the department of eugenics at the Kaiser Wilhelm-Institut für Anthropologie in Berlin-Dahlem, has issued a warning against pursuing too radical a course. In promoting differentiated propagation, one must distinguish the families with sound hereditary qualities from those with unsound qualities. If one should try to eliminate every German family with hereditary taints, one would sound the death knell of the German people. Therefore, experts must be called to make most thorough research in order that only such elements may be excluded from propagation as are unable to propagate other than degenerate progeny. Furthermore, it is important that families with sound hereditary qualities be given financial aid to support large families of children (for example, by remission of taxes and a special tax on bachelors, which has already been introduced in Germany). Muckermann warned against the illusion that all measures proposed would bring rapid results. It is too much to expect that eugenic bureaus will function ideally in a few months.

Professor Fetscher of Dresden, director of a marriage consultation center, found that, during the period 1929-1933, sterilization was indicated in eighty-eight cases; but in only sixty-five cases was he able to bring it about. He cited a family in which five out of eight children were idiots. They have cost the community thus far more than 58,000 marks (\$13,804). In contrast, there have been men or women who have requested sterilization for unjustified reasons. They have been refused.

Vital Statistics of German Cities

The disturbances caused by the economic condition showed signs of subsidence in 1932. The cataclysmic decrease in the marriage rate was checked. The decline in the birth rate underwent a 50 per cent reduction during the second half of the year. The migratory movement continued to subside, the number of removals decreasing more rapidly than the immigrations. In the large cities as a whole, the number of marriages was somewhat smaller than the previous year, but in the cities with from 15,000 to 100,000 inhabitants, marriages showed an increase. Also the birth rate declined only in the large cities. The greatest decline in the birth rate was shown, in recent years, by the industrial cities of Upper Silesia and of Rhineland and Westphalia; after them came Berlin and the Saxon cities Dresden and Plauen. The mortality kept along the low level of the two previous years, the effects of the doubtless often inadequate diet being evidently compensated for by other favorable factors. The increase in population showed a considerable decline as a result of the reduced birth rate. The communes with more than 15,000 inhabitants had an excess of births over deaths amounting to 48,000, or 1.6 per thousand, as against 2.1 and 3.7, respectively, for the previous two years. The greatest losses were recorded of course in the large cities, eleven of which registered more deaths than births. Net losses from emigration exceeding those of the previous year were recorded only by Berlin and Hamburg.

It is evident from the report in the *Reichs-Gesundheitsblatt* that the number of suicides increased. There was a decrease in fatal accidents; also in the number of deaths due to infectious diseases, to childhood fever and to infant mortality from convulsions and syphilis. The diseases of advanced age—cancer, heart disease, cerebral hemorrhage and senile weakness—came more to the front and accounted for more than 42 per cent of all deaths.

Outbreak of Scabies

According to an announcement of the Prussian ministry of the interior, scabies shows a greatly increased incidence, in some parts of the country, among ramblers and persons without permanent abode. A vigorous campaign to combat the spread of the disease should be undertaken. The campaign of enlightenment in the shelters is imperative. To avoid the cost of hospitalization, treatment, so far as possible, should be given

in the shelters after a diagnosis has been made by the local physician of the poor.

Hans Prinzhorn's Death

The unexpected death of Hans Prinzhorn, in Munich, at the age of 47, has been announced. His death marks the passing of one of the most interesting figures of this generation. He devoted himself to the history of art and later turned his attention to psychology and psychiatry. His chief work, "Bildneri der Geisteskranken" (sculptures of psychopaths), was followed by a second, "Bildneri der Gefangenen" (sculptures of prisoners). Prinzhorn taught for a time as a "guest instructor" at a university in southern California.

TURKEY

(From Our Regular Correspondent)

Ankara, June 15, 1933.

The Government Monopoly of Narcotics

The narcotic law, promulgated June 6, makes the manufacture of preparations from crude opium, opium salts, ethers and extracts, morphine and its salts and crude cocaine and its salts, and the import and export of specialties containing such constituents a government monopoly. The monopoly of drugs and narcotics has been established as a part of the ministry of national economy. The new law has twenty articles, the most important of which are as follows:

The monopoly is to attend to all affairs pertaining to the purchase and sale of opium and to engage in all enterprises in connection therewith, to analyze all prospective purchases, to combine the different grades, reclassify them, insure the standardization of opium, organize an administrative center and establish a laboratory, and fix prices. The administration is to indicate the areas set aside for opium cultivation and by advertisements in the press bring to the attention of the public the areas where the cultivation is unlawful. To make sure that aldermen have this information, they are to sign a statement to that effect. Supervision of the opium areas is the responsibility of the civil authorities. The manufacture of preparations under this law is to be carried out at the one laboratory the monopoly will establish and administer in Ankara. Laboratories now manufacturing such preparations are to function no longer. The ministry of national economy, in cooperation with the ministry of health, fixes the regulations on the administration of the laboratory, the kinds of preparations made, their amounts, and the supervision of the sales. Exportation of these preparations is to take place from the Istanbul and Izmir customs. The monopoly will have a board of five trustees, who will serve a term of two years and may be reelected. The monopoly headquarters are located in Istanbul. The ministry of national economy may decide to establish branches in other parts of the country or abroad. Persons growing opium in an unlawful area are to be fined from 5 to 100 pounds and their plantations are to be destroyed or the harvest confiscated. Persons who smuggle crude opium into another country are imprisoned from one to three years and besides are fined three times the value of the opium smuggled. Persons who at the date of the promulgation of this law have a stock of crude opium of the former harvest must within fifteen days make a declaration to the civil authority.

The Reorganization of Istanbul University

The long contemplated reorganization of the Istanbul university is being set in motion by the new minister of education, Dr. Reshid Galib. A temporary faculty is to be appointed for one year. The appointment of the permanent faculty is to take place, May 31, 1934. The recommendations of Professor Malche of Geneva University, who at the invitation of the government made a survey of the situation last year, will be

carried out. The most revolutionary are those in connection with the medical school. With the establishment of the university twenty-five years ago, the medical school established by Sultan Mahmoud II in 1827 became a part of it. Originally the medical school was located in old Istanbul on the European side, but thirty years ago the sultan removed the medical school to Haidar Pasha on the Asiatic shore of the Marmora, then an isolated location. Among the most important of Professor Malche's recommendations was that the medical school be transferred to Istanbul, because of the limited number of hospital beds at the Haidar Pasha clinics. In Istanbul, the psychopathic hospital has 1,480 beds. At the Haidar Pasha clinic, the maximum number is 350. It is possible also to put aside for teaching 800 beds at the Istanbul hospitals. The dormitories are located in Istanbul and the 370 students lose much valuable time in commuting, not to speak of the expense involved. This transfer marks the beginning of the Istanbul university center. Professors who have reached the age limit are going to be retired. Faculty members who have no publications to their credit or those who have no wide knowledge of two modern languages have no chance for reappointment. It is probable that Professor Malche will be offered the presidency of the university and that a number of authorities from abroad will be invited to accept chairs. A committee on publications and translations from among former members of the faculty who are not given a position in the new organization is to be appointed. Professor Malche considers that the publications hitherto in use, either original or translations, have been insufficient.

BUCHAREST

(From Our Regular Correspondent)

June 18, 1933.

Iodized Eggs

One of the latest dietetic fads is the consumption of iodized eggs in cases of secondary and tertiary syphilis, arteriosclerosis, exophthalmic goiter and other maladies in which iodine is indicated. The eggs are produced in special poultry farms under scrupulous hygienic conditions, the animals being periodically subjected to blood tests and other examinations. The hens are given foods that contain a great quantity of iodine, and their drinking water amounts to a weak iodine solution. An analysis of these eggs made at the chemical analytic laboratories in Bucharest revealed that they contain about 6.75 mg. of iodine per hundred grams, while ordinary eggs contain only 0.012 mg. The iodine in the eggs is in the organic form. A disadvantage of the eggs is their repulsive taste, and patients tire of them. There are in Austria two, in Hungary three and in Rumania two special poultry farms where iodized eggs are produced.

The Prevention of Uterine Cancer

Dr. Crainicianu, gynecologist to the Bucharest university clinic, states that 156 cases of uterine cancer were under treatment from 1921 to 1931 and that 68 per cent of these were found on the borderline of operability. The majority of the patients were between 30 and 40 years of age. Uterine cancer represented 7.25 per cent of the total number of gynecologic patients at the clinic. Crainicianu believes that the cause of this situation, in part, is the slow evolution of the disease, as well as the incompetence of midwives, who in the rural parts of Rumania first see these women. However, the chief cause of the frightful spread of cancer is the utter ignorance of this disease among the general public.

As regards prophylaxis, Crainicianu suggests systematic biopsies; also the treatment of precancerous diseases. Much more important is public education by means of lectures, moving pictures and newspaper articles. Women should subject themselves to thorough gynecologic examination twice yearly.

To this end he is going to make an appeal to the government to erect gynecologic advisory centers under the leadership of competent gynecologists. He also urges government regulation of the midwives, most of whom carry on quackery and do abortions.

Marriage and Syphilis

Dr. Aurel Voina of the University of Bucharest lectured at a recent meeting of the Rumanian Medical Society on the necessity of changing the time limit within which syphilitic patients are forbidden to marry. He argued that the unjustified length of time during which they must remain single is harmful to the individual and to the state. Fournier, whose centenary will be celebrated next year, favored the unduly long term of five or six years. Gaucher, late professor of syphilology at the Faculté de médecine de Paris, asserted that a syphilitic man can never be considered completely cured from the point of view of procreation. It must be remembered that the energetic antisyphilitic treatment administered in recent years has shortened the duration of infectivity. The drugs administered at present are much more efficacious than those administered a score of years ago. For this reason, it is unjust to demand abstinence from marriage for five or six years. A bachelor, in comparison with a married syphilitic man, is a disease carrier and therefore a social menace. These circumstances point to the fact that in the interest of social hygiene the point of view of the medical profession regarding permission for persons with syphilis to marry should be revised.

Cutaneous Mycoses in School Children

Cutaneous mycoses form, at present, between 15 and 20 per cent of all skin diseases encountered in the school children of Rumania. The great extension of the trichophyton epidemics in the schools is mainly due to the regrettable fact that the school physicians have no microscopes and that they do not send the children to well equipped laboratories for a microscopic analysis in all early cases. In Rumania, Dr. Theodorescu said that the first microsporia epidemic was in 1925, in a Bucharest children's asylum. In all cases of cutaneous mycosis it is necessary to isolate the patients. To save the children from missing school too long because of the protracted treatment, some authorities suggest establishing special school classes for the sick children. Roentgen treatment is best for mycoses if done by competent radiologists.

BELGRADE

(From Our Regular Correspondent)

July 3, 1933.

The New Law Concerning Venereal Disease

Up to the present there has been no compulsory medical examination before marriage, except when either the bride or bridegroom requested it. Brothels existed also in nearly every town in the country. A new law has been drafted in parliament forbidding brothels and imposing a compulsory medical examination for venereal diseases before marriage. The main points of this new law are as follows:

Veneral diseases are considered to be syphilis, gonorrheal infections and soft chancre in any part of the human body. Persons suffering from venereal disease must undergo treatment; they are examined and treated free of charge in state hospitals and ambulances, and also in university medical clinics and similar institutions.

Every physician treating a patient with venereal disease is required to inform him of its infectious character and that he is obliged to undergo treatment, and to warn him that the law will hold him responsible if he communicates his disease to a healthy person. The physician must warn him not to marry as long as he is not cured. The physician must inquire as to the source of the infection and communicate this information

to the authorities, who will verify it and undertake adequate measures. The physician must keep records of the patients he treats and give all necessary information to authorities if requested to do so officially. If the patient stops treatment before he is cured, the treating physician is obliged to notify the authorities. If there is danger of the patient communicating his venereal disease to another person, he must be discreetly sent to a hospital and there treated until cured.

The Ministry of Public Health must widely propagandize venereal disease, especially among schoolchildren, students, and in the military forces. The heads of hospitals and ambulances for venereal diseases must be active in instructing the population. The keeping of brothels is against the law.

Every person about to be married must produce a medical certificate issued by a state physician that he is free from venereal disease. Priests and other officials who conduct a marriage cannot do so if either the bride or the bridegroom does not have an official medical certificate. If they permit the marriage without such a certificate, they will be punished.

It is forbidden to give any treatment for venereal disease without an examination of the patient; it is also forbidden to give advice by correspondence, to send medicaments or to advertise medicaments for the treatment of venereal disease verbally, through the press, or in any similar manner.

Anybody communicating a venereal disease to another person in any way will be punished by law. If a syphilitic woman undertakes to nurse a healthy baby and communicates the disease to it, she will be punished; equally parents who, knowing that their baby is syphilitic, infect in such manner a healthy nurse will be punished.

The Ministry of Public Health shall open special institutions—aided especially by the women's organizations for girls whose morals are threatened, and for those who have been punished for prostitution, in order to enable them to earn an honest living. Special institutions will be opened for women and girls who come to cities in search of work or who are unemployed. If the morals of a girl under the age of 20 are threatened either in her own family or in the house where she is living, the authorities have the power to remove the girl and hand her over to an institution or to an honest family.

All administrative or other measures which heretofore have been in force for the control of prostitutes are abolished.

The new law solves an important social problem by protecting all young persons, especially girls, against venereal disease.

Death of Professor Joannovic

In the death of Prof. Dr. Georges Joannovic, the faculty of Medicine of Belgrade lost not only one of its leading professors but also its founder. Dr. Joannovic was born in 1871 of Serbian parents who were living in Vienna, where he studied medicine and as a young practitioner was chosen to be the assistant of Professor Paltauf. He worked for twenty-five years at the Institute of Pathology, Histology and Bacteriology in Vienna and was for many years head of the Institute of Pathology and Anatomy of the Vienna Polyclinic. In 1920, after the formation of the kingdom of Yugoslavia, Dr. Joannovic was invited by the government to found the first Yugoslav Faculty of Medicine, and with Dr. Batut and the late Professor Subbotic he founded the faculty. In 1926 the imposing building of the Institute of Pathology in Belgrade, projected according to the ideas of Professor Joannovic, was completed. His work on cancer research is known in all scientific institutions of Europe. After the death of Professor Paltauf Dr. Joannovic was invited to take the chair of his former teacher, in Vienna, but he refused the offer. He was dean of the Faculty of Medicine in Belgrade and a permanent member of the International Office for Public Hygiene in Paris, where he represented his country for many years.

Marriages

JESSE NEWMAN McLANE, Pensacola, Fla., to Miss Marguerite Brittain Thompson of Tallahassee, May 4.

REX T. HENSON, Coeur d'Alene, Idaho, to Miss Edna Stoner of Spokane, Wash., June 2.

RUFUS CARTER ALLEY, Lexington, Ky., to Mrs. Frances Head Hudson, June 10.

CARNOT H. SHERMAN, Oakes, N. D., to Miss Hila Smith of Anoka, Minn., June 8.

RAYMOND R. RICHARDS, Blair, Wis., to Miss Alice Thwing of Augusta, June 10.

GLENN HALL RICKS, Brady, Texas, to Miss Mary Boyd Fleming, June 3.

Deaths

Henry Cottrell Rowland, Washington, D. C.; Yale University School of Medicine, New Haven, Conn., 1898; veteran of the Spanish-American War; war correspondent for *Collier's Weekly* and accredited special agent of the intelligence department, U. S. Navy, in France in 1918; author of several novels and short stories; aged 59; died, June 6, of asphyxia due to lymphosarcoma.

William Ellery McDuffie, Olean, N. Y.; University of Buffalo School of Medicine, 1888; member of the Medical Society of the State of New York; formerly health officer of Olean; past president of the board of education; on the staff of the Olean General Hospital; aged 74; died, June 12, at the Buffalo (N. Y.) General Hospital, of acute agranulocytic angina.

William M. Robertson, St. Louis; University of Virginia Department of Medicine, Charlottesville, 1889; member of the American Urological Association; fellow of the American College of Surgeons; on the staffs of the Jewish and St. Louis City hospitals; aged 67; died, June 6, of chronic myocarditis, uremia and chronic nephritis.

John Eddy Luckey, Vinton, Iowa; Rush Medical College, Chicago, 1897; for many years president of the board of education; fellow of the American College of Surgeons; on the staff of the Virginia Gay Hospital; aged 66; died, June 29, in the University Hospital, Iowa City, of thrombosis and pneumonia.

Clarence Wyman Fipphen, Shrewsbury, Mass.; Harvard University Medical School, Boston, 1919; member of the Massachusetts Medical Society; served during the World War; formerly member of the school committee and local board of health; aged 39; died, May 7, of heart disease.

William Sinn Gardner, Elkton, Md.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889; for many years medical examiner for the Mutual Life Insurance Company, New York; aged 67; died, June 5, in Towson, of cerebral hemorrhage.

Charles W. Shaff, Lewiston, Idaho; State University of Iowa College of Medicine, Iowa City, 1881; member of the Idaho State Medical Association; fellow of the American College of Surgeons; on the staff of St. Joseph's Hospital; aged 77; died, June 22, of cerebral hemorrhage.

Thomas Edward Walton Grover, Huntington, W. Va.; University of Michigan Medical School, Ann Arbor, 1877; University of Louisville (Ky.) School of Medicine, 1883; formerly city and county health officer; aged 76; died, May 28, of pernicious anemia.

Moe Lenkowsky, Brooklyn; St. Louis University School of Medicine, 1928; member of the Medical Society of the State of New York; on the staffs of the Jewish and United Israel-Zion hospitals; aged 30; died, June 20, of acute myocarditis and leukemia.

Henry William Rice, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1896; member of the South Carolina Medical Association; aged 64; on the staff of the Columbia Hospital, where he died, June 24, of heart disease.

William Joseph Egan, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; on the staff of St. Bernard's Hospital; aged 58; died, July 7, of cerebral hemorrhage.

Katherine Berry Richardson, Kansas City, Mo.; Woman's Medical College of Pennsylvania, Philadelphia, 1887; aged 75; founder of the Mercy Hospital, where she died, June 3, of a ruptured gallbladder and peritonitis.

James Franklin Donnelly, Portland, Ore.; University of Pennsylvania School of Medicine, Philadelphia, 1908; on the staff of the Good Samaritan Hospital; aged 49; was found dead in bed, June 28, of heart disease.

Percy A. Scollick, Kansas City, Kan.; Western University Faculty of Medicine, London, Ont., Canada, 1912; on the staff of the Providence Hospital; aged 44; was found dead, June 27, of coronary infarction.

Charles U. Davis, Fredericktown, Mo.; Beaumont Hospital Medical College, St. Louis, 1898; member of the Missouri State Medical Association; aged 61; died, May 4, of coronary occlusion and arteriosclerosis.

Ernest E. MacLeod, Los Angeles; University of Oregon Medical School, Portland, 1906; aged 62; died, May 9, in the Los Angeles County General Hospital, of inguinal hernia and arteriosclerotic heart disease.

Tracy George Russell, San Francisco; Columbia University College of Physicians and Surgeons, New York, 1899; on the staff of the Southern Pacific Hospital; aged 60; died, June 18, of heart disease.

Winifred Mason Dowlin, Claremont, N. H.; University of Vermont College of Medicine, Burlington, 1892; member of the New Hampshire Medical Society; aged 67; died, April 12, of arteriosclerosis.

John Leonard Smith, Pittsburgh; Temple University School of Medicine, Philadelphia, 1915; aged 42; on the staff of the Allegheny General Hospital, where he died, June 21, of acute appendicitis.

Frederic John Patton, New York; University of Minnesota Medical School, Minneapolis, 1899; served during the World War; aged 63; died, June 8, in the New York Polyclinic Hospital, of leukemia.

Sol Spainhour Flynt, Rural Hall, N. C.; College of Physicians and Surgeons, Baltimore, 1889; bank president; member of the school board; aged 72; died, June 15, of chronic myocarditis.

William Joseph Langan, St. Louis; Missouri Medical College, St. Louis, 1875; member of the Missouri State Medical Association; aged 82; died, May 22, of chronic myocarditis.

William John Shields, Sarasota, Fla.; Long Island College Hospital, Brooklyn, 1897; aged 61; died, June 24, in the Cleveland (Ohio) Clinic Hospital, of cerebral hemorrhage.

George M. Haywood, Minneapolis; Homeopathic Medical College of Missouri, St. Louis, 1881; aged 76; died, June 18, of coronary sclerosis and myocarditis.

William F. Waters, Flat Rock, Tenn.; Meharry Medical College, Nashville, 1910; aged 50; died, June 17, in Nashville, of cerebral edema and pneumonia.

Shandy Z. Holland, Daytona Beach, Fla.; Missouri Medical College, St. Louis, 1890; formerly mayor; aged 72; died, May 21, of hypostatic pneumonia.

Susan Fairfield Laird, Blytheville, Ark.; Hahnemann Medical College and Hospital, Chicago, 1905; aged 75; died, May 25, of cerebral hemorrhage.

William Price Scott, Stockton, Calif.; California Medical College, San Francisco, 1899; aged 67; died, May 10, of arteriosclerosis and coronary occlusion.

Horace Tennent Dodge, Long Beach, Calif.; Hahnemann Medical College, San Francisco, 1887; aged 76; died, June 13, of acute dilatation of the heart.

William Lincoln Barnes, Atlanta, Ga.; University of Louisville (Ky.) School of Medicine, 1884; aged 70; died, June 24, of diabetes mellitus.

Charles Eugene Bryant, Blackfoot, Idaho; Minnesota Hospital College, Minneapolis, 1885; aged 84; died, April 2, at Pocatello, of nephritis.

Henry Nathaniel Scholl, Green Lane, Pa.; Jefferson Medical College of Philadelphia, 1907; aged 49; died, April 5, of cerebral hemorrhage.

John Benjamin Adams, Honea Path, S. C.; University of Georgia Medical Department, Augusta, 1905; aged 51; died, June 1, of pneumonia.

John Crittenden Jordan, Detroit; University of Tennessee Medical Department, Nashville, 1894; aged 73; died, June 18, of chronic nephritis.

John M. Christian, Hamilton, Ga.; University of Georgia Medical Department, Augusta, 1892; aged 59; died, May 2, of chronic myocarditis.

W. M. Weatherall, Star City, Ark.; Physio-Medical College of Texas, Dallas, 1906; aged 64; died, June 12, in Pine Bluff, of gastritis.

Bureau of Investigation

THE WESTERN MEDICAL CORPORATION

Selling Phenobarbital (Luminal) as a Mail-Order Treatment for Epilepsy

The Western Medical Corporation is a later name for what was earlier known as the Western Medical Association. The concern sells on the mail-order plan what the public is led to believe is a cure for epilepsy. For some years it did business from 137-143 W. 62nd St., Chicago; recently (June, 1933) it moved to 415-423 W. 39th St., Chicago.

The Western Medical Association was the subject of an article in this department of *THE JOURNAL*, Jan. 28, 1922. It was brought out in this article that J. B. Creevy and W. W. Lister, M.D., were the two men mainly concerned in operating this piece of mail-order quackery. The public had no means of knowing that Dr. Lister was in any way connected with the Western Medical Association, and part of the advertising "come-on" sent out by the concern was a photographic facsimile of what was described as an "unsolicited letter" from Dr. Lister on his professional stationery, puffing the Western Medical Association's alleged treatment.

J. B. Creevy has also been connected with other mail-order quackeries, the Van Ard Sanatorium and the so-called Cass Treatment, both of them alleged cures for rheumatism.

In 1928 the Western Medical Association changed its name to the Western Medical Corporation. According to information furnished by the Secretary of State of Illinois, the Western Medical Corporation was incorporated in the State of Delaware and licensed to transact business in the State of Illinois as a foreign corporation in April, 1933. According to the same source of information, J. B. Creevy is its president.

Creevy's name appears nowhere in the advertising. The name that is played up is that of Harry L. James, M.D., who is described as the vice-president of the corporation and as the "directing physician." Harry L. James was born in Springfield, Ill., in 1885 and holds a diploma from Northwestern University Medical School, 1911, and an Illinois license granted in 1912. Needless to say, the man is not a member of his local medical society or of the American Medical Association. An important part of the advertising ballyhoo of the Western Medical Corporation is a six-page puff of Harry L. James, M.D., written by Harry L. James, M.D. In this Dr. James capitalizes his dead father's work and even his grandfather's work as physicians, although, so far as our records show, neither of these older men was even remotely connected with mail-order quackery. No small amount of space in this autobiography of Harry L. James is given to his exploits during the World War and how he came to be awarded an engraved "Roll of Honor" certificate. The sum and substance of this autobiography is, however, to emphasize that Harry L. James is one of three generations of physicians and that he specializes in the "treatment of epilepsy attacks."

In the advertising Dr. James would have the public believe that he is peculiarly well qualified to treat cases of epilepsy. A most careful search of medical literature from the time of Dr. James' graduation until June, 1933, fails to show that he has contributed a single article on any medical subject in any reputable medical journal.

In the autobiography already referred to, Dr. James says to the prospective victim that he is sending the advertising matter to him "with the thought that perhaps there is no physician near you who is thoroughly acquainted with the most up-to-date methods of treating epilepsy attacks."

In the first article published on this concern, a detailed report was given of the findings of the A. M. A. Chemical Laboratory of the so-called "Western Medical Association Treatment." The tablets that were furnished at that time came in three boxes labeled, respectively, A, B and C. Box A was found to contain what were essentially one-grain tablets of phenobarbital (luminal). Box B contained tablets that had the general characteristics of those unscientific mixtures of pepsin, pancreatin, etc., vaguely described as "digestive tablets." Box C contained a laxative—tablets that responded to tests for emodin-bearing drugs and aloin.

In other words, this treatment is essentially the administration of phenobarbital to persons Dr. James never sees and sent out in a secret mixture on the mail-order plan for the self-treatment of a serious condition—epilepsy. To even an intelligent layman it should be obvious that there is neither moral nor scientific excuse for business of this kind.

THE GLOW OF LIFE FRAUD

Another Aphrodisiac Fake Debarred from the Mails

"Glow of Life" is a nostrum that was put out by the Glow of Life Laboratories Company of Columbus, Ohio. The company was owned and operated by Frank J. Albert and his brother, Ray J. Albert. Frank J. had no medical training or experience; Ray J. was a registered pharmacist. In March of this year, the Post Office Department sent the company a copy of a memorandum of charges calling upon the company to show cause why a fraud order should not be issued against it. At the time set for the hearing, no one appeared at Washington, but the lawyer for the company filed a written reply to the memorandum of charges. Judge Horace J. Donnelly, Solicitor for the Post Office Department, in his memorandum to the Postmaster General recommending the issuance of a fraud order, stated that the Glow of Life Laboratories Company advertised "in various publications of a kind which are not particular as to the character of the advertisements which

GLOW OF LIFE

**Helps You Overcome
Your Sexual Weaknesses**

Newest, greatest, most effective and safest sexual rejuvenator, stimulant and tonic known for weak, deficient, starved and abused conditions of the sex glands caused by impotence, advanced age, sexual excesses, fast living, late hours, nervousness, over-work, worry, disease, etc. Used by men and women everywhere. Easy to take. Results will more than surprise you. Don't take chances or waste your money on other worthless and harmful preparations, when only Glow of Life can help you. Satisfaction guaranteed or money refunded. All correspondence confidential. Correspondence with physicians invited. Mailed to you in plain sealed package, postpaid 24 tablets for \$1.00; 100 for \$3.00; 200 for \$5.00. Druggists and agents write us for our special proposition.

GLOW OF LIFE LABORATORIES CO.
Dept. C-2, P. O. Box 744, Columbus, O.

Typical advertisement of "Glow of Life." This appeared in *Cloverleaf American Review*, May, 1932.

they print, including magazines whose principal contents are pictures of nude females and stories of a salacious character."

Those who answered the advertisements were sent a circular entitled, "Glow of Life, The Fountain of Youth, A Remedy That Will Help You To Overcome Your Sexual Weaknesses." With the circular came an order blank which contained the statement: "Our reputation and standing as manufacturing pharmacists and chemists is back of every order we send out."

The postal authorities in their investigation discovered that the Glow of Life Tablets were actually manufactured for the promoters by another concern. The tablets sold for \$1 a package of twenty-four, or about 4 cents a tablet. They consisted, according to the government's report, essentially of nuxvomica and zinc phosphide, together with chalk and gum. The promoters had claimed that they also contained arsenic, gold, cantharides (Spanish fly) and laxatives. None of these were found.

The government presented expert medical evidence to prove that these tablets would not restore "lost manhood" or cure sexual impotence or frigidity. It also brought out the fact that the ingredients of Glow of Life Tablets have been incorporated in other preparations sold under similarly fraudulent claims in cases wherein fraud orders have been issued against the promoters of such schemes; yet, the Glow of Life concern claimed that their product was an original discovery!

In view of the findings, Judge Donnelly recommended the issuance of a fraud order and on April 26, 1933, the Hon. James A. Farley, Postmaster General, issued such an order, closing the mails to the Glow of Life Laboratories Company.

Correspondence

ALIMENTARY ANAPHYLAXIS AND FEVER OF UNKNOWN ORIGIN

To the Editor:—On page 1958 of *THE JOURNAL*, June 17, the answer to a question concerning fever of unknown origin makes no mention of the possibility of alimentary anaphylaxis as a cause of fever.

To test this possibility, all food should be omitted for a period of forty-eight hours, the patient being given nothing by mouth except water. Disappearance of the fever during this time will indicate that its origin was due to alimentary anaphylaxis. The particular food responsible can then be determined by adding articles of diet one by one.

A. Haritantis (*Presse méd.* 41:119 [Jan. 21] 1933; abstr. *THE JOURNAL*, April 1, p. 1072) describes such a case of alimentary anaphylaxis with prompt disappearance of fever on omission of food. There are many points in common between the case of Haritantis and the patient of your correspondent, such as daily exacerbations of fever, absence of leukocytosis and negative general examination except for enlargement and tenderness of the liver.

This hypothesis of alimentary anaphylaxis is so easy to establish or to refute by the simple omission of food that it should be considered in all cases presenting frequently occurring chills or fever without obvious cause.

JOHN E. WALKER, M.D., Opelika, Ala.

VENOUS PRESSURE

To the Editor:—Concerning "A Clinical Method of Venous Pressure Determination" by H. F. Robertson (*THE JOURNAL*, July 15, p. 206), several important facts must be noted. It has been shown that the level of collapse is altered by the speed at which the arm is raised—very slowly, slowly, or rapidly. The tonus and irritability of the vessel wall and exercise of the part must be considered. The Gärtner and Frey methods of estimation of venous pressure have not come into general use because these simple methods of estimation are not sufficiently accurate.

Variations of venous pressure in conditions other than cardiac decompensation occur, obesity, pregnancy, the menopause, pneumothorax (tuberculosis), mediastinal disease, and emphysema and dyspnea resulting from it. Kroetz, in 1922, showed a rise in venous pressure in pneumothorax. "Essential venous hypertension" might be mentioned.

Engorged jugular veins, passive congestion in the lungs and elsewhere, cyanosis or subcyanosis, and enlarged tender liver are usually present when the venous pressure is increased in the arm. However, the clinical determination of the venous pressure in the arm may give earlier indications of beginning myocardial failure. In such cases decholin (intravenous) injections will give a delayed bitterish taste in the tongue and mouth and indicate early circulatory failure.

While visiting (1929 and 1931) in the Rudolph Schmidt medical clinic of the German University of Prague, I saw Winternitz and others use intravenous decholin injections as a useful means of rating cardiovascular insufficiency. The exact time interval from the moment of intravenous injection to the first appreciable bitterish taste in the tongue is used as the guide. This is increased in early myocardial failure.

Vaquez of Paris stated in 1924 that Frey's method and Gärtner's method are both unreliable. He concludes that "it appears that at present the study of venous pressure can scarcely instruct us in the normal or deficient resistance of the heart. It must be left for the future to decide whether, by perfecting the methods, these interesting but still limited ideas are suscep-

tible of development, and of opening to the clinician new paths in cardiac or venous pathology."

William Evans of Detroit said, in 1932, "the estimation of venous pressure has not come into general clinical practice apparently because simple methods of estimations are not sufficiently accurate or because the more exact methods are not sufficiently simple."

HYMAN I. GOLDSTEIN, M.D., Camden, N. J.

"THE RESIDUAL EFFECTS OF WAR GASES"

To the Editor:—In *THE JOURNAL*, May 13, appears an editorial review of Gilchrist and Matz's article on this subject. In this editorial the statement is made that "mustard gas as used in the World War caused untold misery." It is believed that this statement may possibly create an impression that you do not wish to convey, for when the general effect of the use of mustard and other chemical agents in war is considered, exactly the opposite is found to be true. Mustard and other chemicals reduce the misery that is incident to warfare.

This point is best illustrated by a study conducted by Col. Albert G. Love of the Medical Corps of the United States Army. This study on war casualties was printed as Army Medical Bulletin 24. We in the service consider this work the outstanding statistical contribution pertaining to war data.

The following figures taken from Colonel Love's work show how much in the way of death and misery chemical weapons have avoided, and it should be remembered that mustard gas was the most effective of all chemical weapons. On page 111:

"The percentage of killed to wounded would then be:

"(a) 16 per cent when there are both gas and gunshot wounded;

"(b) 20 per cent when there are only gunshot wounded."

An analysis of these figures shows that when gas is added to other implements of warfare fewer men will be killed; the exact saving in life is 20 per cent. This does not mean that gas kills 20 per cent less than other weapons. Gas kills few, but when gas is used along with other weapons the death rate is reduced as quoted. This means that 20 per cent fewer families will lose loved ones during war. Is this not a misery-reducing factor?

I wish also to call your attention to pages 49 and 50 of the study mentioned. On page 49 you will see that almost 90 per cent (to be exact, 89.18 per cent) of the individuals whose battle injuries are caused by poisonous gas make a complete recovery and are able to return to full military duty, while you will notice that over one third of all of the casualties that are caused by gunshot injuries are rendered unfit for any further military service. Please notice that here we have war gases or chemical weapons avoiding over two thirds of the wartime misery. It is also worthy of note in connection with these two tables that on page 49 one finds that less than 2 per cent (1.73 per cent, to be exact) died in hospital from chemical injuries, while 8.12 per cent of those whose injury was caused by gunshot wounds died in hospital. Here again it is found that chemical weapons effect a reduction of the death rate of almost 80 per cent, and the consequent reduction in the misery that the families suffer is certainly equally great.

Please do not think that I am one of that group who make themselves ridiculous by referring to any weapon as "a humane weapon." I do not believe there is anything humane about war. But I do think that war is a very human eventuality that the world will always be confronted with, and I also think that a weapon can be a highly efficient agent for the production of casualties and still help to reduce the misery that is an incident of war.

LEON A. FOX, M.D., Washington, D. C.
Major, Medical Corps, U. S. Army.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TONSILLECTOMY IN SMALL CHILDREN

To the Editor:—What is the present attitude toward tonsillectomy in small children? I have advised this operation for a child aged 2½ years, who is suffering from bronchial asthma. The attacks recur approximately at intervals of six weeks. Skin tests are negative and elimination diets have given no results. Roentgenograms show infected antrums. The tonsils are moderately enlarged and chronically inflamed. The parents have been advised elsewhere against tonsillectomy. Please omit name.

M.D., Michigan.

ANSWER.—The attitude toward tonsillectomy in young children should be conservative. Occasional attacks of tonsillitis running a mild course unassociated with cervical adenitis and, of course, such other things as involvement of the endocardium should not make operation imperative. There is no set age limit, but many men like to wait until 3 or 4 years of age. As far as bronchial asthma is concerned, it is the consensus of most authorities in the field of allergic diseases that tonsillectomy neither prevents nor cures bronchial asthma. Of course, a child with asthma may have badly infected tonsils, like any other child. In this event the question should be settled on its own merits and without regard to the lung condition, unless this is so severe as to be a positive contraindication. Roentgenographic evidence does not make the diagnosis of infected sinuses. The shadow so frequently seen in allergic individuals may just as easily be due to an edematous polypoidal nonsuppurative involvement of the sinus mucosa as to a purulent condition. The roentgenographic evidence should be coupled with a search in the nose for the presence of pus; if this is present and does not yield to conservative measures such as suction and astringents, one should carry out lavage or at least diagnostic puncture, in this case preferably under gas anesthesia. An asthmatic child with a suppurative sinusitis of any degree does better when this condition is removed.

CARITOL AND CAROTENE

To the Editor:—I have seen statements that Carotene as sold by the S. M. A. Corporation in the form of Caritol is recommended for treatment of cataract. Is there any justification for this statement? Has Caritol been accepted by the Council on Pharmacy and Chemistry? In an advertisement of the S. M. A. Corporation there appears the following statement: "Cod Liver Oil, halibut liver oil and other fish oils do not contain carotene (primary vitamin A), and the secondary form, which they do contain, cannot be converted into primary vitamin A. Carotene should be prescribed either alone or with other vitamin products." This implies that Carotene should be added to fish liver oils. Is there any justification for this belief? Is Carotene any better than vitamin A? Please omit name.

M.D., Ohio.

ANSWER.—The claim for the value of carotene in the treatment of cataract is apparently based on the reprint of an article by Dr. T. H. Shastid (Carotene and Cataract, *American Medicine*, January, 1933). This report has been circulated widely among physicians. The only part of Dr. Shastid's paper dealing with the announced subject is a short paragraph in which he reports that in "three fairly advanced cases" of cataract he had "excellent results with Caritol." In the three succeeding paragraphs the increase of visual acuity in patients is given and the author urges "other oculists to try out caritol thoroughly," remarking that "whenever it does no good, it will do at least no harm." This may be true; but if it "does no good" the patient loses time and money to gain the increased visual acuity which, today, operative procedure can certainly give. The remainder of Dr. Shastid's article deals with quite other matters. The statement elsewhere in the article that Caritol had apparently desensitized to "house-dust" allergy and had given a "decided increase in her hearing power" to a patient is hardly scientific.

It is, of course, misleading for the firm to base claims of the value of "Caritol" in the treatment of cataract on the casual report of three cases. The Council on Pharmacy and Chemistry has recognized no such claims for Carotene or for vitamin A as contained in fish liver oils or concentrates. It is surprising, to say the least, that the firm should be advancing such claims.

The statement quoted by our correspondent is found in an advertisement appearing on page 2, *Medical Economics*, April, 1933. It is a masterpiece of misrepresentation. The fact that fish oils do not contain carotene has nothing whatever to do with their therapeutic value and the fact that the vitamin A

which they do contain cannot be converted into carotene is also entirely beside the point, since it would be ridiculous to desire to have the "finished vitamin" converted into an inert precursor. Interpreted strictly, the statement in the last sentence of the quotation implies that carotene *should* be prescribed in order to bring about desired therapeutic results; at most, one might be justified in saying that "carotene" may be so prescribed, which is an obvious platitude. In this quotation, as in other advertising propaganda, the firm stresses "primary" vitamin A as if it had some superior virtue. As a matter of fact its value apparently depends on its being converted into true vitamin A, which the firm attempts to belittle by the designation "secondary form." There is evidence that carotene is by no means always converted quantitatively into vitamin A or its equivalent; so that the relative importance would seem to be in favor of the fully formed or "secondary" form as of foremost significance. Furthermore, it is debatable whether one ought in fairness to refer to carotene as "primary vitamin A." The false implication is that carotene actually is a kind of vitamin A, whereas it is merely a mother substance or possible forerunner of the vitamin itself.

CREOSOTE BURNS OF THE EYE

To the Editor:—During the past year I have had several cases of burns of the conjunctiva caused by creosote getting in the eye. These burns have been rather persistent (from ten to twelve months), manifesting themselves with severe conjunctivitis with no evidence of adhesions between the bulbar and palpebral conjunctiva. I should like to know whether there is anything in creosote that would cause this condition to persist. It might be some other chemical than creosote causing this condition. If you have any idea what this chemical is, please let me know. I have also noticed that, following traumatic eye conditions and foreign bodies in the eye, these cases have had a great deal of meibomian gland infection. When pressure is exerted on these lids, pus can be seen exuding from the ducts of the glands and in some cases this infection is rather difficult to clear up. I should like to know whether this type of infection is common following traumatic injuries and foreign bodies of the eye. Please omit name.

M.D., Texas.

ANSWER.—Creosote is a name applied to a complex mixture of phenols and their ethers produced in the fractional distillation of wood tar. It is also applied to a similar product obtained from coal tar. Both products are usually brownish, because of impurities; pure creosote is colorless. It is impossible to say whether the irritative effect on the conjunctiva is due to one of the phenols or to one of the ethers or to some impurity. In all probability the compound causes a chemical irritation due to a low degree of superficial burn of the conjunctival epithelium which destroys the integrity of the tissues. It is not probable that any of the creosote remains on or in the tissues to produce continued burning. The persistent conjunctivitis is due to secondary infection that is difficult to control owing to the altered character of the epithelium in which the infection is found. Mechanical lavage with non-irritating solutions will prove more efficacious in the long run than bactericidal agents.

Infection of the meibomian glands of the eyelids is common following trauma to the eye and is best treated by frequent and repeated massage of the eyelids.

LEAD POINTS IN ELECTROCARDIOGRAPHY

To the Editor:—In THE JOURNAL, Oct. 1, 1932, in Carter's article on electrocardiography, page 1171, it is stated "that the three lead points, when connected, form a triangle, which can be considered to be essentially equilateral (fig. 7). Electrically and geometrically lead 2 is equal to the sum of lead 1 and 3 and therefore . . ." I cannot see the application. Will you please set me right. Please omit name.

M.D., Pennsylvania.

ANSWER.—The three lead points universally used in electrocardiography, as Einthoven has indicated, constitute the vertices of a triangle which can be considered to be essentially equilateral. The projections of the total resultant heart potential in the plane of the chest on the sides of this imaginary triangle represent the potential differences at any given period in the cardiac cycle recorded by the electrocardiograph for the various leads. The projection on the side connecting the right arm and the left arm represents the potential of lead 1; on the side connecting the right arm and the left leg, potential of lead 2, and that on the remaining side the potential of lead 3. These potentials may be likened to the drops in voltage over three resistances connected to form a triangle. In such a closed network it is known by Kirchhoff's Law that the algebraic sum of the potential drops is equal to zero. Hence the potential in lead 2 at any instant equals the sum of the potentials in leads 1 and 3 at the same instant. From an inspection of figure 7 (page 1172) it is evident that, if potentials in leads 1 and 3 are considered

positive, the potential in lead 2 must be considered negative. Further discussion may be found in "The Mechanism and Graphic Registration of the Heart Beat," by Thomas Lewis, London, Shaw and Son, 1925, page 107.

DIET IN GOUT

To the Editor:—Please designate the articles of food in the following list which may be permitted to a patient with chronic gout (medical textbooks are either indefinite on the subject or do not mention this group):

| | | |
|---------------|------------------|------------------|
| Cranberries | Tomatoes, juice | Turnips |
| Clam chowder | Tomatoes, stewed | Cabbage |
| Oyster soup | Bananas | Corned beef |
| Corn bread | Strawberries | Malted milk |
| Rye bread | Cherries | Bacon |
| Stewed corn | Rhubarb | Ham |
| Sauerkraut | Lentils | Avocado |
| Salmon | Dried prunes | Peanut butter |
| Lamb, roast | Sweet potatoes | Cherries (fresh) |
| Tomatoes, raw | Beets | |

Is there a book that contains a complete and detailed list of foods which may be given patients in various diseases and which should be prohibited?

EMIL KRULSH, M.D., Portland, Ore.

ANSWER.—Usually in a case of gout the foods containing purines are restricted. The amount of purine in the various foods can be determined from the quantitative tables compiled by J. Walker Hall. Unfortunately not all foods are listed, but as far as we can determine in the list submitted in the question we are able to give the following:

Foods allowed: corn bread, rye bread, stewed corn, raw tomatoes, tomato juice, stewed tomatoes, bananas, strawberries, fresh cherries, canned cherries, rhubarb, sweet potatoes, beets, turnips, cabbage, malted milk, avocado pear, peanut butter, prunes.

Foods restricted: cranberries, clam chowder, oyster soup, salmon, lamb roast, lentils, corned beef, bacon, ham, sauerkraut (because of heavy seasoning).

Detailed diet lists may be found in the following books:

- McLester, J. S.: Nutrition and Diet in Health and Disease, Philadelphia, W. B. Saunders Company.
Baer, Oscar: Diet Prescriptions, Niagara Falls, N. Y., Aronson's Service and Supplies.
Friedenwald, Julius, and Rubrah, John: Diet in Health and Disease, Philadelphia, W. B. Saunders Company.
Hall, J. W.: Purine Bodies in Foodstuffs, London, 1903, quoted by Carter, Howe and Mason: Nutrition and Clinical Dietetics, 1923.

USE OF SPECTRUM ANALYSIS IN LIVING HUMAN BODY

To the Editor:—Is it possible by means of the x-rays or other instrumentality to determine intra vitam the organic constituents of bone and other tissues of the body by spectrum analysis and, if so, quantitatively?

THOMAS I. O'DRAIN, M.D., Philadelphia.

ANSWER.—The conditions under which spectrum analysis of organic materials must be carried on preclude its application to the living human body. Such methods could be applied only to tissues removed at biopsies or to samples of blood, urine or the like. While hemoglobin, and possibly some other substances, might be uncertainly recognized in an analysis of light that had passed through the ear or the hand, the opacity of human tissues is too great to permit the obtaining of any definite results; certainly, no quantitative results are possible.

Some inorganic constituents may be identified by x-ray spectrum analysis, such as CaCO_3 , $\text{Ca}_3(\text{PO}_4)_2$ in bone (n being not less than 2 nor greater than 3). Or they may be excluded, as CaHPO_4 or CaC_2O_4 (Roscherry, H. H.; Hastings, A. B., and Morse, J. K.: X-Ray Analysis of Bone and Teeth, *J. Biol. Chem.* 90:395 [Feb.] 1931). Some approximate quantitative estimates by x-ray spectrum analysis have been made on material removed from bodies.

OPTIMUM ATMOSPHERIC CONDITIONS IN HOSPITALS

To the Editor:—Inquiry has been made of me regarding the optimum atmospheric conditions for hospital operating and convalescing rooms. I should like to have your opinion regarding conditions of temperature, humidity and air motion which should be maintained in such places. I should also appreciate your opinion as to whether or not conditions should be varied for different types of operations. Any data will also be appreciated which you may have on convalescing rooms. Several of the hospitals in town are interested in air conditioning and I should like to assist them in the selection of equipment but do not wish to make any recommendations until I have additional information from some authority as to what conditions should be maintained. I am therefore requesting that you give me the benefit of your experience in this matter.

OTIS L. TURNER, Engineer, Washington, D. C.

ANSWER.—The optimum atmospheric conditions for an operating room in a hospital are a temperature of from 74 to 76 F. and a relative humidity of from 50 to 55, with a ventilation circulation of four or five air changes an hour. There is

no reason why these optimum conditions should vary with the type of operation performed.

In convalescing rooms a comfortable temperature is of more importance than the relative humidity, although a desirable humidity has admitted value. For convalescent wards the optimum temperature is from 68 to 70 F. in the daytime and somewhat lower than this at night, with a relative humidity of from 50 to 60 and a ventilation circulation of four or five air changes an hour.

The relative humidity most suitable often depends on the disease. Pneumonia patients and those suffering from bronchial conditions will often find relief in a low relative humidity (from 20 to 25), while in another section of the same hospital, in the nursery department, a high humidity, approximating 60 to 65, is most satisfactory.

CHRONIC NONSPECIFIC PROSTATITIS

To the Editor:—Will you please outline the treatment for chronic nonspecific prostatitis? My patient has had massages for more than a year by a urologist but still he has recurrences with fever and violent headaches. Smears and cultures have shown *B. coli* as the predominating organism. No history of gonorrhea has been given and repeated Wassermann tests are negative. He is able to go about his business most of the time and otherwise appears good except for a spastic colon. Roentgenograms of the chest are negative also. Any recent advances or suggestions would be especially appreciated. Please omit name and address.

M.D., Illinois.

ANSWER.—A recurrent nonspecific prostatitis is rarely primary. This patient should be studied for other foci of infection which may be responsible for the recurrence of the prostatitis. The fact that he has a spastic colon is rather suspicious. Calculi in the follicles of the prostate gland are at times the cause of persistence or recurrence of infection. A roentgenogram should reveal such calculi. An autogenous vaccine, although rarely helpful, might be tried.

METABOLIC DISORDER WITH GLYCOSURIA AND DISTURBANCE OF WATER BALANCE

To the Editor:—A woman, aged 46, came under my care a year ago when she had an acute infection of the upper respiratory tract. Diabetes had been diagnosed several years before, when, according to the history, a bowel resection was done, but the diabetic condition had never been treated. She has one grown child. When she went to bed with the respiratory condition, she weighed 215 pounds (97.5 Kg.); on recovery, she weighed 195 pounds (88.5 Kg.). Though when I first saw her one drop of urine reduced 5 cc. of Fehling's solution, sugar has at most times been eliminated from the urine by dieting alone. A few recurrences have lasted less than a week. Cooperation has been so good that it has never been necessary to resort to the use of insulin. However, attempts to bring her down to approximately normal weight have failed. The basal metabolic rate on two occasions has been -5 and -15; the systolic blood pressure runs from 160 to 170 mm. An electrocardiogram was typical of hypertension but otherwise negative. Thyroid has been given up to 12 grains (0.78 Gm.) a day and diet has been reduced to 900 calories or less, but the weight remains between 185 and 190 pounds (84 and 86 Kg.). When thyroid is discontinued, she gains rapidly. Calcium has been given almost continuously and pituitary and ovarian extracts have been combined with the thyroid for short periods. The pulse rate has not gone above 106, but after a few days, on large doses of thyroid, edema of the legs becomes marked with increase of weight. Please omit name, M.D., Illinois.

ANSWER.—There are two problems in this case. The mild glycosuria described in association with obesity and hypertension probably belongs to the type of mild diabetes often seen with this combination. Usually it is not only unnecessary but unwise to use insulin, for when the weight is reduced to normal the glycosuria is apt to disappear.

In considering the question of the patient's obesity, attention should be called to the fact that during the infection of the upper respiratory tract she lost 20 pounds (9 Kg.). This fact in itself shows that the patient can lose weight. Also, the interesting observation regarding the appearance of edema of the legs brings up the question as to how much of her weight increase is due to a disturbance of water balance. It may be that in addition to a marked restriction of calories attention should be paid to the salt and water intake, both of which should be definitely limited. The total sodium chloride intake should be restricted to the amount natural in foods, and the patient should add no salt to any of her food. The fluid intake might well be restricted to 1,000 cc. or, at the most, 1,500 cc. daily. In addition, some type of diuretic drug, such as ammonium chloride, by mouth, or one of the mercurials, such as salyrgan intravenously, might be given a trial.

Until efforts to correct the possible error in water balance are tried, it would seem unwise to attempt other forms of therapy. Naturally, however, a low caloric diet must be maintained.

USE OF MERCUROCHROME INTRAVENOUSLY
IN GONORRHEA.

To the Editor:—Please give your opinion on the use of 1 per cent mercurochrome used intravenously in the treatment of active gonorrhea. the use of mercurochrome in certain high concentration applied locally as an antiseptic, and the use of merthiolate, 1:1,000, used as a local antiseptic as tincture of iodine is used.

RICHARDS A. IRONS, M.D., Thomasville, Ala.

ANSWER.—This question was referred to the Brady Urologic Clinic of Johns Hopkins University Medical School, which replies:

Injections of 1 per cent mercurochrome intravenously should, of course, be combined with appropriate local treatment. Even when the infection has become well established and has resisted various types of local treatment, the eradication of the infection can be hastened by intravenous injections of mercurochrome in many cases, according to published reports. Also, if used soon after the onset of complications, such as acute epididymitis and acute prostatitis, the duration and severity of these complications are appreciably shortened. The intravenous injections of mercurochrome are an important adjunct to the therapy of gonorrheal rheumatism in the acute, subacute and chronic forms. In the acute, extremely painful joints, this form of treatment, it is reported, is often followed by marked relief of discomfort and inhibition of the destructive process.

As with other forms of specific or nonspecific therapy, intravenous mercurochrome should not be used unless one has been assured by physical examination that there is no preexistent cardiorenal disease. The patient should be warned that in about one hour's time a reaction is to be expected, manifested by malaise, chill, fever, nausea and, perhaps, vomiting. The best results are usually obtained in cases presenting such a reaction. In some cases, some vague abdominal discomfort may occur, accompanied by slight diarrhea. It is, therefore, customary to instruct these patients to go home to bed immediately following the injection, but the reports do not indicate a reaction of sufficient severity to require hospitalization. In adults, a dosage of 12 cc. of a 1 per cent solution is used and, at the same time, local treatment. After an interval of two or three days, an injection of 14 cc. is given, and, four days later, an injection of 16 cc. If organisms are still present, injections of 18, 20 and 22 cc. of a 1 per cent solution may be given at intervals of four or five days. However, as a general rule, definite results have been obtained usually after the first three doses. It is extremely important that only the crystals prepared for intravenous use be used. After the 1 per cent solution has been made in freshly distilled, boiled, cooled water, it must not be boiled or autoclaved.

In urologic work, mercurochrome is rarely used in stronger than a 2 per cent solution in the urethra or bladder. Occasionally, in the treatment of ulcerative lesions about the genitalia, we have used 10 and 20 per cent solutions with satisfactory results, but it must be remembered that these solutions have certain caustic effects. Brady has used 20 per cent aqueous solution in the treatment of gonorrheal vaginitis and cervicitis, applications being made with tampons.

For skin sterilization, a solution of acetone, alcohol and aqueous 2 per cent mercurochrome is used exclusively in the Brady Clinic, as it does not produce the irritation and desquamation that so often follow the use of tincture of iodine, especially about the external genitalia.

Whereas there are many antiseptics far more powerful than mercurochrome, the chief value of this drug is emphasized to be that its antiseptic action is combined with a relative lack of irritating and toxic properties.

TREATMENT OF CHRONIC MYELOGENOUS
LEUKEMIA

To the Editor:—A friend of mine, aged 31, has chronic myelogenous leukemia. His latest white cell count is 870,000, 65 per cent of the cells being myelocytes and myeloblasts. His only complaint is occasional severe priapism. There is some question as to when to begin roentgen therapy, also the use of arsenic preparations or even benzene. I would appreciate information as to best treatment, including relief and prevention of priapism. Please omit name and address.

M.D., New York.

ANSWER.—Irradiation, by either x-rays or radium, is the most effective means for the control of chronic myelogenous leukemia. It is not to be considered a cure nor will it materially prolong life, but it will increase the period of effective life and markedly alleviate symptoms. With time its effectiveness becomes less marked, the disease process becoming more refractory with each successive treatment. Treatment by radiation should therefore be conserved; the general condition and the complaints of the patient rather than the blood count should

determine whether and when such treatment should be begun or repeated.

In the present instance, with a white blood count of 870,000, of which 65 per cent are myelocytes and myeloblasts, and with the patient suffering from attacks of priapism, it would seem wise to start treatment with radiation at once.

If irradiation by x-rays is selected (as indicated by the question), a total dose of from 300 to 350 roentgens over the spleen for each series of treatments should be effective, from 100 to 116 roentgens being given each over the anterior, posterior and lateral surfaces of the spleen, at a distance of 20 inches, with 180 or preferably 200 kilowatts, with 1 mm. of copper and 1 mm. of aluminum filters, at intervals of three days. Beneficial results will probably be in inverse proportion to the number of immature or blast cells present.

Arsenic has long been used with benefit in the treatment of chronic leukemia, but with the advent of irradiation its use had all but gone out of fashion. There appears to be no good reason why arsenic should not be administered in the intervals between periods of irradiation, and, in fact, it is again being extensively used in this manner.

The use of benzene has been almost if not entirely abandoned in the treatment of leukemia in recent years on account of the difficulty of control and the adverse effect it has on the development of red blood cells.

The exact cause of priapism in leukemia is not known; it is, however, but one of many clinical manifestations of leukemia and should recede, if not disappear, as a manifestation of the disease with the benefits to be anticipated by the use of irradiation and arsenic. Other means for the control of priapism, such as the use of large doses of potassium bromide or monobromated camphor by mouth, the surgical aspiration or ligation of the corpora cavernosa, or the use of diathermy by rectum have been recommended but are of questionable effect.

USE OF IODIZED PROTEINS IN ARTERIOSCLEROSIS

To the Editor:—May I ask you to be good enough to advise me whether enough scientific data have been established between the protolipo and alkali iodides as to their absorption, systemic action, elimination and preference, especially in cases of arteriosclerosis. (I know that in syphilitic cases potassium iodide is preferable.) Should the calcium intake in case of arteriosclerosis be reduced or kept about the same level? Kindly omit name.

M.D., California.

ANSWER.—Thus far, clinical studies have failed to reveal any convincing evidence of differences in effect of the electrolytic alkaline salt iodides and iodized lipins or iodized proteins. Numerous claims of superior activity for one or another preparation have been advanced, but thorough clinical trial fails to substantiate these claims. The mechanism of action of the ordinary iodides is not understood. The most conspicuous effects are seen in the stimulation of absorption of some inflammatory exudates, particularly syphilitic gummas. The iodides do not show any germicidal power. The effects of iodides on arteriosclerosis are probably limited to the enhancement of absorption of syphilitic exudates in the arterial walls; it is most questionable whether they are of any appreciable benefit in nonsyphilitic arteriosclerosis. Certainly the iodides have no direct lowering effect on the arterial tension.

Iodine compounds with proteins and lipoids are somewhat less irritating to the alimentary tract than potassium iodide. The percentage of iodine in the various organic iodides, as listed in New and Nonofficial Remedies, varies from 18 to 80 per cent. Much variation in pharmacologic effect is therefore to be anticipated, based on weight for weight dosage; based on actual iodine ingested, the pharmacologic effect does not vary much. The iodized fatty acids produce similar systemic effects, but they are much more slowly absorbed and more slowly eliminated. Iodized fatty acids are saponified and absorbed in the small intestine, as are the ordinary fats. The chemical investigations of F. C. McLean (*Arch. Int. Med.* 15:92 [Jan.] 1915) and others have demonstrated that most of the iodine is in the lipid fraction on tissue extraction when iodized fatty acids are administered; when potassium iodide or iodized proteins were given to animals, more iodine was found in the water soluble fraction of the tissues. McLean concluded that iodized proteins and the metallic iodides have almost identical action but that iodized lipins are slowly absorbed and secreted as such. Histochemical identification of iodides in tissues is extremely difficult; as yet no wholly satisfactory method has been found (Gersh, E. I., and Stieglitz, E. J.: *Anat. Rec.*, May 1933).

In view of these considerations it is highly improbable that any appreciable difference in clinical effects could be anticipated from one or another of the various iodide compounds. Theoretically the iodized lipoids might offer some advantages:

slower absorption, milder and more prolonged action and increased lipid solubility (arteriosclerotic lesions are lipid in nature). Thus far these theoretical considerations have not received adequate clinical proof. There is no indication for radical restriction of calcium-containing foods in arteriosclerotic disease. Additional calcium medication is unnecessary and unwise.

USE OF SODIUM MORRHUATE IN THROMBOPHLEBITIS

To the Editor:—I am now treating a woman, aged 45, with varicose veins who gives a history of having had an indurated area at the lower end of the inner side of the right leg for the past four to five years. This area at times swells considerably and becomes painful. When I examined her, I found a red, very thick and indurated area at the site mentioned, which was not painful (6 cm. transverse, 4.5 cm. vertical diameter) and only slightly tender to the touch. The patient weighs 245 pounds (111 Kg.). The blood pressure is 150 systolic, 100 diastolic. The lungs and heart are normal. Urinalysis is negative except for poor concentration (the specific gravity is only 1.012). The Wassermann reaction of the blood is negative. I should like to treat this patient by the injection method. In the meantime I have advised elevation of the leg, with applications of warm boric acid solution. Would the presence of the red, indurated area be a contraindication to injection? Is chronic nephritis a contraindication? I have inquired at a local druggist concerning sodium morrhuate, mentioned by Smith (THE JOURNAL, Dec. 10, 1932, p. 2008), but the druggist was not familiar with the preparation. What is its nature and what company produces it? Is it necessary to use a tourniquet when injecting this chemical? Please let me know also whether you believe the indurated area will clear up following the injection treatment. I have informed the patient that if this lesion is neglected it will eventually form a chronic varicose ulcer. Was I correct? Please omit name and address.

M.D., New York.

ANSWER.—The description of the case suggests a superficial patchy thrombophlebitis with a tendency to recur. A search should be made for infected teeth and tonsils. If the deep veins are patent and provocative injections of a few drops of sodium morrhuate do not activate a latent phlebitis, a cautious obliteration of the veins above the thrombophlebitic induration may be attempted. Nephritis or the presence of degenerative kidney lesions does not contraindicate the injection treatment. Sodium morrhuate is the iodine salt of fatty acids of cod liver oil. A description of the product and tests for its purity appeared in THE JOURNAL, June 3, page 1766. It is available in 5 and 10 per cent solution. The Council on Pharmacy and Chemistry has accepted for inclusion in New and Nonofficial Remedies Ampules Sodium Morrhuate 5% with Benzyl Alcohol (Searle); another brand, we are informed, is before the Council for consideration. The use of the tourniquet is not obligatory. The indurated area may soften to some extent and the red discoloration may become lighter, but a certain amount of pigmentation will remain. The induration should also be treated with prolonged elastic support, such as the Unna's paste boot or elastic adhesive dressings, and, in rebellious cases, can be favorably influenced by small repeated doses of x-rays. The thrombophlebitic patch may break down very easily and thus form a chronic thrombophlebitic ulcer. Generally speaking, the case described requires considerable experience and an activation of a latent phlebitis with ascending thrombosis should be carefully avoided.

TROPHIC ULCER IN DIABETES

To the Editor:—I have a patient, aged 46, with true diabetes mellitus. He weighed 290 pounds (131 Kg.) four years ago and now weighs 215 pounds (97.5 Kg.). He is kept free from sugar with two doses of insulin while on a diet of 2,250 calories. The point that interests me is the treatment of an ulcer on the sole of the foot, which is punched out and from time to time develops sinuses under the skin. It becomes necessary to slit up these tracks, which heal but leave the ulcer present as usual. This condition was present on the other foot but is now healed after being present for six months. The ulcer now present has been there for six months and has a foul discharge. I have tried dressing it at different times with the following: scarlet red over a period of several weeks; dichloramine over a period of several weeks; iodox ointment over a period of several weeks; alcohol over a period of several weeks; bacteriophage ointment for several weeks. It looks like a perforating ulcer, but the Wassermann reaction has always been negative. The patient tells me that since boyhood he has had callous spots of both feet, which he has been able to care for with salicylic acid in collodion. The last few years he has not had the same success. I should appreciate any advice you may care to give. The textbooks, including Joslin, advise general care, but I do not seem to have success. Please omit name and address.

M.D., Illinois.

ANSWER.—From the description, the ulcer is a trophic disturbance. The predisposing cause of such an ulcer in a diabetic patient is usually a diabetic neuritis which has rendered the innervated area partially or wholly anesthetic. The constant pressure of a corn or a poorly fitting shoe may then act as the immediate exciting agent to produce the lesion. The development of the ulcer is, of course, favored by the poorer nutritional state of the limb due to the arteriosclerosis that is

usually present. The latter factor and the constantly open wound also account for the recurrent infections that have had to be treated.

In view of the foregoing, one would hardly expect the ulcer to respond to treatment by the application of antiseptics alone. The treatment should be directed at the cause of the lesion, which is the constant, unrelenting pressure or trauma to that particular spot on the sole of the foot. Prolonged rest and elevation of the foot are indicated. Any exuberant epithelial growth about the ulcer may be removed, and quartz light or other forms of radiant heat may be of benefit. Mild antiseptic dressings should be used only to protect the wound from extraneous infection. When the ulcer has healed, attention should be directed to the care of the feet and the padding of the shoes so as to avoid pressure at the site of the ulcer.

The local application of insulin to the ulcer has been reported to be of benefit in some such cases and may be worth trying in conjunction with the suggestions already given.

IRRIGATION AND MASSAGE IN CHRONIC GONORRHEA

To the Editor:—In the answer to the query regarding chronic gonorrhea (THE JOURNAL, April 1, p. 1058), the last three lines of the third paragraph mention "alternating massage with dilation of the prostatic urethra, followed by instillation or irrigation." An instructor advised irrigation first and massage afterward, owing to the increased danger of epididymitis with the reverse procedure. May I have the consensus on this point?

E. D. ABRAHAM, M.D., Los Angeles.

ANSWER.—There is no reasoning for the danger of producing epididymitis by reversing the procedure given in the answer. The usual methods in all well regulated places make use of irrigation following massage for the purpose especially of washing out from the urinary tract the expressed secretions resulting from this manipulation and is the method to be recommended.

ONYCHOLYSIS

To the Editor:—For more than a year a patient of mine has noted that her fingernails are loosening from their beds, at the sides of the nails. The condition is becoming progressively worse. The strips of loosened nail are about a sixteenth of an inch in width, and in some cases extend back almost to the moons. At least a third of the surface of one nail is undermined. The nail bed is not particularly tender and is not moist. There are no signs of active infection, nor has there been any infection in the past. There is no suggestion of a low metabolism, and the history is devoid of suggestion. Will you mention possible causes and appropriate treatment? Please omit name.

M.D., California.

ANSWER.—From the description, this must be one of the rare cases of true onycholysis, in which there is no manifest general or local disease to account for the loosening of the nails. Of the few cases on record, in a number there has been hyperhidrosis of the hands, sometimes associated with cyanosis and cold hands and feet. The toenails are not often involved. Others have shown no signs of acrocyanosis. In one case, the trouble existed on both third fingers from early childhood. In another, the loosening of the nails was associated with severe pain in the upper extremities, possibly an atypical case of erythromelalgia, or Raynaud's disease. The etiology is wholly dark. Therapy suggested by Julius Heller, the chief authority on this subject (*Handb. d. Haut u. Geschlechtskr.* 13:115 [No. 2] 1927) consists of washing the hands in hot water, followed by stimulating applications containing tar, resorcinol and salicylic acid in oil or in alcohol and glycerin, painted on or as a dressing. Preparations of arsenic may be given internally, with care to prevent its continued use. The prescription should be labeled "Do not repeat."

SODIUM AMYTAL IN OBSTETRICS

To the Editor:—Can you give me any information regarding the use of sodium amytal in obstetric practice? The makers recommend giving 3 grains (one capsule) as soon as the cervix is effaced or dilated to at least 2 cm. A second dose (3 grains) is given in from one to four hours if necessary. What effect have the barbiturates on the force of labor pains? Is there any danger to the fetus in their use?

W. J. COCHRANE, M.D., Westborough, Mass.

ANSWER.—Opinion is divided concerning the success obtained with sodium amytal in obstetrics. Most obstetricians who employ this drug are enthusiastic about it. Some administer it orally, others rectally and still others intravenously. In most instances, regardless of the route, complete amnesia is secured if the drug is given early and in sufficient doses. The general consensus is that labor is not retarded by the barbiturates. It is claimed that sodium amytal furnishes a satisfactory method of treating spastic cervix and retraction ring. It is generally

conceded that, when given in proper doses, no ill effects are observed on the babies. In contrast to these favorable opinions are some which maintain that administration of sodium amylal necessitates an increased frequency of forceps deliveries and results in the frequent narcotization of babies.

This drug and other sodium barbiturates have two distinct disadvantages: First, its administration, whether by mouth, by rectum or intravenously, requires skill and good judgment; therefore it must be given by a physician and not by a nurse. Second, restlessness, in some instances quite violent, is observed in a definite proportion of women. This necessitates an increased personnel to manage these women in labor, aside from the harm that may result to them, especially to those with a high blood pressure.

The Council on Pharmacy and Chemistry cautions against the intravenous use of sodium barbiturates, except under conditions of emergency.

TORSION OF THE TESTICLE

To the Editor:—A man, aged 24, gives the following history: Four years ago in a running jump, he jumped a height of three feet. While in the air, he suddenly felt a severe pain in the right testicle, which seemed to him as if the cord was being pulled on the testicle. He was doubled up with pain, which lasted from half to three quarters of an hour. Afterward, the testicle was swollen twice its normal size. He was put to bed, and the next day the other testicle was swollen and as tender as the right. He remained in bed one week, during which time the scrotum was supported with a pillow. Since being up he has worn a suspensory but has a continual burting at the site of both external rings, which are normal in size. During the past four years he has been examined repeatedly by an excellent urologist, medical man and surgeon, and no pathologic condition has been found. Kindly advise as to proper diagnosis and treatment. Please omit name. M.D., California.

ANSWER:—From the history, it is evident that the patient suffered from a rare condition variously termed "torsion of the testicle" or "torsion of the spermatic cord."

The treatment, as followed at that time, apparently relieved his condition at the time. When the torsion has been relieved, the testicle, as a rule, rapidly returns to normal. On the other hand, when the torsion persists and is not relieved within a short time, complete atrophy usually follows; therefore it would be interesting to know whether or not he has, at this time, atrophy of one or both testicles.

On the other hand, his pain at this time may be referred pain due to infection in the prostate gland, or seminal vesicles, or both. Because of this possibility, a careful rectal examination is in order and this should include stripping of the prostate and vesicles so that the fluid expressed may be examined for the presence of pus, in which event the usual treatment for chronic infection is in order, such as massage, hot sitz baths, heat by rectum, and the internal administration of potassium iodide, 0.65 Gm., three times a day, and sodium salicylate, 0.65 Gm., three times a day.

If the prostate and vesicles are free of infection and the pain persists, it might be well to suggest fixation of the testicles in the scrotum by an open operation.

EFFECTS OF PHENOLPHTHALEIN ON KIDNEY

To the Editor:—Kindly tell me whether there is any evidence to show that the normal or diseased kidney is injured by the prolonged use of phenolphthalein in various combinations. Please omit name.

M.D., Connecticut.

ANSWER:—While phenolphthalein has been generally considered a nontoxic drug, the enormous increase in its use in the form of various proprietary combinations is bringing about a modification of this attitude toward the substance. This fact was called to the attention of the readers of THE JOURNAL in an article, "Phenolphthalein as a 'Patent Medicine,'" published, April 29, in the Bureau of Investigation's department. This article stated in part: "Among its disadvantages is a degree of variability in action, small doses sometimes acting excessively, when at other times a larger dose will fail to act. It may cause, in addition to purgation, colic, rapid pulse, difficult breathing, and even collapse. Hydrick as long ago as 1914 reported a case of albuminuria lasting from one to three days following the administration of phenolphthalein in doses of from one to two grains. Fuerbringer in 1917 reported a case of poisoning following the taking of about nine grains of phenolphthalein by a woman who developed cardiac weakness, a rapid, intermittent, irregular and thread-like pulse, with irregular respiration and dyspnea and some mental confusion. Later the patient developed a trace of albuminuria and an almost total anuria. Holz has reported observing severe gastrointestinal disturbances, hematuria, chill and pain suggesting renal stone colic."

Susceptible persons occasionally have urticarial and erythematous eruptions following the use of phenolphthalein. In the latter type, peculiar polychromatic eruptions on the skin with bullous, vesicular and eroded lesions of the mucosa and genitalia are provoked. These lesions leave pigmented areas, which may persist for months or years.

BULBAR PARALYSIS

To the Editor:—A sister-in-law of mine in Iowa, aged 54, in fair health, able to do her housework, in August of 1932 consulted several physicians and a well known clinic in regard to her health and particularly because of occasional spells of difficult swallowing and attendant fear of serious trouble or possible death. After a thorough examination, general and neurologic, a diagnosis of bulbar paralysis of the chronic poliomyelitic type was made. This condition apparently has been very slowly progressive, and at present she has been enjoying a period of remission. A destructive arthritis accompanies this condition but is independent of the main complaint and preexisted some ten or more years. I am particularly interested in an opinion as to treatment, palliative or curative, if known, also as definite a prognosis as can be given. If the disease causes a fatal termination, and if treatment is of no avail, is it reasonable to suppose that the patient will eventually become bedridden and the difficulty in swallowing result in general exhaustion? A final question: Is the end peaceful or attendant with pain requiring opiates? Please omit name. M.D., Washington.

ANSWER:—A bulbar palsy cannot be treated symptomatically. If difficulties in swallowing occur, tube feeding may be resorted to. Death usually occurs from an aspiration bronchial pneumonia, although sometimes inanition may be the final cause of death. The end is often disagreeable, as consciousness persists in spite of difficulties in respiration and swallowing. Opiates usually hasten the end because of their depressing effect on respiration. It might be stated that the diagnosis of chronic poliomyelitis at the age of 54 localized in the medulla with progression has probably been made for a vascular disease affecting the medulla.

USE OF SILVER NITRATE IN URETHRA

To the Editor:—For the treatment of gonorrheal urethritis by means of topical applications through the urethroscope when there is a folliculitis, I have always used 2 per cent silver nitrate. Is this the usual strength employed? Please omit name.

M.D., Ohio.

ANSWER:—If the application to protruding follicles is confined to these prominences by controlling the procedure through a urethroscope, silver nitrate solutions of any concentration may be used. Treating extensive areas of the urethral mucosa with high per cent silver solutions is apt to lead to the formation of urethral strictures.

SO-CALLED ASEPTIC URETHRAL DISCHARGE

To the Editor:—In THE JOURNAL, May 20, in answer to a query, you state that "an aseptic purulent discharge from the urethra is as a rule secondary to chronic congestion of the prostate and seminal vesicles." While the gonococcus has been definitely excluded as the offending organism, sufficient evidence has not been adduced to prove the urethral discharge sterile in this case.

A urethral discharge of this nature is usually due to chronic infection of the prostate and seminal vesicles, and a smear showing over 20 pus cells to the high power field tends to confirm the diagnosis. A fresh specimen of prostate secretion showing from 20 to 80 per cent pus will often show only 20 pus cells or less to the high power field, when smeared, fixed and stained. For this reason it is well for the urologist to examine the fresh secretion microscopically before making a smear for the laboratory. In these infections, the colon bacillus is often the offending organism, though foci in distant parts of the body may be responsible. Old strictures and chronic infections of Cowper's glands are not infrequently found, even with a negative history. Either of these conditions may cause a chronic urethral discharge.

The treatment of chronic infection of the prostate and seminal vesicles, unless tuberculous in origin or complicated by malignancy, consists of thorough gentle massage, deep irrigations and the passage of sounds. Sounds are indicated independent of the presence of stricture so as to insure emptying the prostatic ducts, the orifices of which at times become plugged with purulent or caseous material. Hydrotherapy and diathermy are useful adjuncts. Infection tends to recur, especially if foci of infection, as in the teeth or tonsils, otitis media or cowperitis, are not removed.

I do not agree with your statement that successful evacuation of the seminal vesicles can be accomplished only by the use of a club-shaped instrument. It requires thorough training and practice to enable one to empty the seminal vesicles properly, or the prostate gland for that matter. The use of any instrument for this purpose is fraught with danger. It must be borne in mind that sterile pus from the prostate as well as from the kidney may be due to tubercle bacilli. While symptoms of tuberculosis of the prostate and genital tract are often elicited and confirmed by careful examination, the final diagnosis depends on guinea-pig inoculation or potato culture.

I read Queries and Minor Notes with interest and not without benefit.

J. GREGG SMITH, M.D., Portsmouth, Va.
Lieutenant Commander, M. C., U. S. Navy.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVighe, Juneau.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Boston, Chicago, Cleveland, New York, Philadelphia, St. Louis and San Francisco, Oct. 28. *Oral.* New York, Dec. 15-16. Application must be filed before Sept. 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The examinations will be held in various cities of the United States and Canada, Dec. 9. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY. Boston, Sept. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 14-15. Sec., Dr. Charles Duncan, State House, Concord.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Sept. 12-13. Sec., Dr. J. M. Byrum, Mammoth Bldg., Shawnee.

PUERTO RICO: San Juan, Sept. 5. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

WISCONSIN: *Basic Science.* Madison, Sept. 23. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

California February-March Examination

Dr. Charles B. Pinkham, secretary, California Board of Medical Examiners, reports the written examination held in Los Angeles, Feb. 28-March 2, 1933. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Sixty-four candidates were examined, 57 of whom passed and 7 failed. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|---------|------------|----------|
| College of Medical Evangelists | (1932) | 79.2 | 83.4 |
| Stanford University School of Medicine | (1932) | | 88.1 |
| University of California Medical School | (1932) | | 85.9 |
| University of Colorado School of Medicine | (1931) | | 81.4 |
| (1932) | 80 | 81.4 | |
| Yale University School of Medicine | (1931) | 81.9 | 84.3 |
| George Washington University School of Medicine | (1932) | 83 | 83.2 |
| Howard University College of Medicine | (1931) | | 85 |
| College of Physicians and Surgeons of Chicago | (1906) | | 89 |
| Northwestern University Medical School | (1932) | | 78.4 |
| (1932) | 79.4 | 79.9 | 83.9 |
| Rush Medical College | (1928) | 79.1 | 76.1 |
| Indiana University School of Medicine | (1932) | | 80.7 |
| State University of Iowa College of Medicine | (1932) | | 82.8 |
| University of Michigan Medical School | (1931) | 84.9 | 81.1 |
| University of Minnesota Medical School | (1932) | | 80.7 |
| St. Louis University School of Medicine | (1932) | 80.4 | 80.9 |
| of Medicine | (1931) | | 88 |
| of Medicine | (1932) | | 82.1 |
| College of Medicine | (1932) | | 82.6 |
| College | (1931) | | 83.9 |
| University of Oregon Medical School | (1932) | | 79.4 |
| (1931) | 80.1 | 81.8 | 83 |
| Jefferson Medical College of Philadelphia | (1928) | | 79.1 |
| Temple University School of Medicine | (1932) | | 76 |
| (1932) | 78.2 | 78.4 | 80.7 |
| Woman's Medical College of Pennsylvania | (1932) | | 83.6 |
| University of Tennessee | (1931) | | 85.3 |
| University of Texas School | (1932) | | 83.7 |
| University of Wisconsin | (1932) | 79.7 | 84.7 |
| McGill University Faculty of Medicine | (1924) | | 83.7 |
| (1927) | 81.2 | (1932) | 82.6 |
| Medizinische Fakultät der Universität Greifswald, Germany | (1920)† | | 76.3 |
| College | FAILED | Year Grad. | Per Cent |
| Northwestern University Medical School | (1933) | | 72 |
| University of Illinois College of Medicine | (1931) | | 71.6 |
| Laval University Medical Faculty | (1912) | | 62.6 |
| Karl-Franzens-Universität Medizinische Fakultät, Austria | (1928) | | 65.6 |
| Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia | (1928) | | 58.1 |
| Charkovsky Universität, Russia | (1923)† | | 66.7 |
| Psycho-Neurological Institute Medical College, Russia | (1917)† | | 69.8 |

Fourteen physicians were licensed by reciprocity and 2 physicians were licensed by endorsement from January 19 to April 13. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| Rush Medical College | (1927) | | Iowa |
| State University of Iowa College of Medicine | (1925) | | Iowa |
| University of Minnesota Medical School | (1928) | | Minnesota |
| Washington University School of Medicine | (1907) | | Arizona |
| (1929) | Washington | | |
| College of Medicine | (1905) | | Nebraska |
| College, New York | (1896) | | Tennessee |
| College of Physicians and Surgeons | (1923) | | New York |

| | | |
|--|--------|-----------|
| University of Buffalo School of Medicine | (1931) | New York |
| Medicine | (1923) | Ohio |
| Medicine | (1926) | Hawaii |
| Medicine | (1931) | Tennessee |
| | (1931) | Virginia |

College LICENSED BY ENDORSEMENT Year Endorsement Grad. of

Harvard University Medical School (1928) N. B. M. Ex.

St. Louis University School of Medicine (1906) U. S. Army

*This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

†Verification of graduation in process.

Minnesota April Report

Dr. E. J. Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, April 18-20, 1933. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Thirty-two candidates were examined, all of whom passed. One physician was licensed by reciprocity and 3 physicians were licensed by endorsement. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|---|--------|------------|-------------|
| Northwestern University Medical School | (1931) | | 91.4 |
| Indiana University School of Medicine | (1930) | | 87.2 |
| Harvard University Medical School | (1929) | | 90.1 |
| University of Minnesota Medical School | (1932) | | 81.3* |
| 84.1,* 84.1,* 84.4,* 84.6,* 85.4,* 86.6,* 87.3,* 87.3,* 89,* 89.1, 90.2,* 91.4, 92.2,* 93.6, (1933) 85.3,* 87.4, 87.6, 89.3 | | | |
| Univ. of Nebraska College of Medicine | (1931) | 93.4 | (1932) 86.3 |
| Columbia University College of Physicians and Surgeons | (1932) | | 85.5 |
| University of Cincinnati College of Medicine | (1931) | | 88 |
| Temple University School of Medicine | (1928) | | 89.6 |
| University of Alberta Faculty of Medicine | (1927) | | 88.3 |
| University of Manitoba Faculty of Medicine | (1929) | | 91.2 |
| University of Toronto Faculty of Med. | (1929) | 93.6 | (1930) 91.4 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| Washington University School of Medicine | (1931) | | Wisconsin |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|---|-------------------------|------------|----------------|
| Rush Medical College | (1932) N. B. M. Ex. | | |
| University of Minnesota Medical School | (1932) 2) N. B. M. Ex. | | |
| *This applicant has received an M.B. degree and will receive an M.D. degree on completion of an internship. | | | |

Book Notices

Electrosurgery. By Howard A. Kelly, M.D., LL.D., F.A.C.S., and Grant E. Ward, M.D., F.A.C.S. Cloth. Price, \$7. Pp. 305, with 352 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

Electrosurgery opens up a vista, these authors believe, destined in no small measure to replace scalpel, ligature and hand contacts with wounds, as well as notably to pare down the number of cases listed as "inoperable" by skilled surgeons. Too much time is not wasted in this volume in preliminary and theoretical discussions of the various effects on tissues that can be brought about by the use of various currents. However, the tissue changes produced by electrodesiccation and "acusection" are clearly differentiated and their means of attainment and clinical indications defined. Thereafter the volume is divided into topical electrosurgery; chapters are given to the skin, oral cavity, otolaryngology, thyroid, thorax, breast, abdomen, gynecology, urology, proctology and the central nervous system. Anesthesia, preparation of the patient and postoperative care are covered. In other words, this is a manual, the most complete one in any language, covering the use of electrosurgery in the various regions. This book is convenient in teaching and invaluable as a guide to those interested in the use of electricity in surgical operations.

Intracranial Tumors. By Percival Bailey, Professor of Surgery, University of Chicago. Cloth. Price, \$6. Pp. 475, with 155 illustrations. Springfield, Illinois: Charles C. Thomas, 1933.

This interesting volume is a series of twenty clinicopathologic lectures, elaborated into book form. In the first three chapters the author discusses tumors in general, giving those anatomic and physiologic facts which he has found of value in neurologic diagnosis. Fifteen chapters are devoted to various types of tumors, beginning with acoustic neuroma, then hypophyseal adenomas and craniopharyngiomas, and so on. In all these chapters, cases are reported which were demonstrated in these lectures. The last three chapters are devoted to gen-

eral diagnosis, differential diagnosis and treatment. The book contains much valuable information. The author has devoted most of his time in recent years to a study of the pathology of brain tumors and is one of the recognized authorities on this phase of the subject. He has developed a fondness for collecting brain tumors, as he stated at the international neurologic congress in Berne in 1931, as others have a fondness for collecting butterflies. This point of view has colored his book to such an extent that it has led him into difficulties. The book, as he states in his preface, is for students; yet, by his overemphasis of the pathologic point of view it will inevitably confuse students, since the titles of his chapters from 4 to 18 are all types of tumors, while the subtitles refer to areas of the brain, and one not familiar with the subject might gain the idea that the symptoms are characteristic of certain types of tumor. At times the author realizes this fallacy, when, in chapter 13, after devoting twenty-two pages to an excellent account of oligodendrogliomas, a tumor so rare that Cushing in his 2,023 cases saw only 27 instances, he remarks, "None of the symptoms we have just described is in any way characteristic of this type of tumor." The reason for the arrangement of the chapters is not apparent. It would seem more logical if chapter 10, on encephalic tumors, in which the author gives a general survey of the modern point of view about the pathology of brain tumors, preceded chapters in which he describes the different types of tumors.

The chapters on pituitary tumors and glioblastoma multiforme are particularly valuable, since the author has incorporated in them his own studies and views on these types to which he has devoted special attention; but in these chapters, as well as in all the book, the author has seriously handicapped himself by his dislike of glazed paper (as he states in his preface), on which alone photomicrographs and roentgenograms may properly be reproduced. Certainly since the author is emphasizing pathology, it would have been most desirable had he reproduced microscopic sections accurately, either by photomicrography or by such masterly drawings as were made by Horn and others in Brödel's laboratory. The same criticism must be made of the drawings of patients. Reproductions of good photographs certainly would be far better than such drawings as are shown on pages 89, 114, 174 and 315, which seem to be little better than caricatures. Just why the author has himself made all the sketches of roentgenograms is not apparent, for they are so crudely done that even one experienced in reading plates can make little out of them. These sketches add nothing to the text. There are a distressingly large number of errors which should have been picked up in the proofreading, and it is to be hoped that a future edition will contain a more complete index.

There is so much useful information in this book that it seems a pity it has not been arranged in more accessible form; but it should be in the library of all neurologic surgeons, all students both of neurology and of neuropathology. As an example of the publisher's art, the book has all the fine qualities present in books from the Thomas press.

Études cliniques de syphiligraphie. Par ERNEST SCHULMANN, médecin des Hôpitaux de Paris. Préface du Docteur A. Sézary. Paper. Price, 40 francs. Pp. 226, with 15 illustrations. Paris: Masson & Cie, 1932.

This is not a complete treatise on clinical syphilis but a discussion of various important and interesting problems connected with the diagnosis, prophylaxis and treatment of the disease. The author has divided his work into fifteen compact, readable chapters. The first deals with the proper method of obtaining a history from the patient, pointing out the voluntary and the unintentional errors. The diagnosis of the chancre is discussed, medicolegal aspects, the importance of dates in the history of the patient, how to avoid errors in chronology, and its bearing on the prognosis and on the type of treatment best suited to the case. The second chapter contains a simple, clear treatment of the question of infectivity before the chancre is observed and the contagiousness of occult syphilis. In the chapters that follow, the author studies critically the clinical forms of syphilis without chancre, the evolution of syphilis of the central nervous system without alteration of the spinal fluid, pruritus and syphilis, syphilitic asthenia, syphilitic gastric ulcer, the significance of fever in syphilis, zoster and syphilis, syphilis manifested only by serologic evidence, sterility and syphilis, the complication of syphilis with tuberculosis, natural

immunity in syphilis, and myxedema and syphilis. These subjects are thoroughly covered and are made more impressive at many points by illustrative case histories. The book is excellently printed, the illustrations are clear, and the subject matter has been presented in a conservative and practical manner. It should be read by every practitioner, particularly the dermatologist and syphilologist.

The Nutritive Value of the Banana. Report of Researches Conducted and Superseded by the Institute of Practical Arts Research Laboratories of Physiological Chemistry, Teachers College, Columbia University. By WALTER H. EDDY, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University. Paper. Pp. 37. New York: Bureau of Publications, Teachers College, Columbia University, 1933.

This summarizes the nutritive value of the banana, including chemical composition, character of the protein, effect on intestinal flora, acid-base value of the minerals, hematopoietic properties, effect on calcium absorption, vitamin content, and digestibility. The banana is a good source of calories, of "quick energy"; its protein is of good value, the carbohydrates are well tolerated in sprue and celiac disease and they are corrective to a considerable degree in these two conditions. The banana stimulates intestinal growth of gram-positive aciduric types and opposes development of colon forms. It effects increase of volume of the stools, producing a mild laxative action, and contributes significant quantities of calcium, magnesium, phosphorus, sulphur, iron and copper. It has an alkaline reaction to offset acidosis of acid diets, has red blood cell regenerating potency, increases utilization of calcium, is a good source of vitamins A, B, C and G, is an excellent milk modifier for infant feeding, and when ripe is almost completely digestible and is well tolerated by persons of all ages.

Opuscula selecta Neerlandicorum de arte medica. Fasciculus undecimus quem curatores miscellaneorum quae vocantur Nederlandsch Tijdschrift voor Geneeskunde collegerunt et ediderunt Amstelodami Sumptibus Societatis. Van Helmont, Gaubius, Schroeder van der Kolk. Cloth. Pp. 359, with illustrations. Amsterdam, 1932.

This volume of republications with translations of Netherlands medical classics brings contributions illustrating the history of the doctrine of vitalism in medicine. Samples of writings on vitalism by three Netherlands physicians are reprinted in the original Latin or Dutch and in German translations: Johannes Baptista van Helmont, Hieronymus Davidus Gaubius, and J. L. C. Schroeder van der Kolk.

J. B. van Helmont (1577-1644), the founder of the iatrochemical school in medicine, was a pioneer student of gases. He is said to have used first the word "gas." He held that each physiologic process is due to a special gas which is governed by a special spirit under the supreme guidance of a sensory-motive soul ("blas"). He expressed certain original ideas about immunity and has been credited with the following happy anticipatory pronouncement of the properties of convalescent serum in infections: "For he who has once recovered from that disease has not only obtained a pure balsaical blood, whereby for the future he is rendered free from any recidivation of the same evil, but also infallibly cures the same affection in his neighbour . . . and by the mysterious power of Magnetism transplants its balaam and conserving quality into the blood of another." Van Helmont is represented in this book by two tracts, one entitled *Archeus Faber* ("the internal overseer of the semen") and *Spiritus Vitalis* ("vital spirit"). The Latin form is taken from his *Ortus Medicinæ*, Amsterdam, 1648, and the German from the translation, published in Sultzbach in 1683 under the title *Aufgang der Artzney-Kunst*.

Gaubius, or Gaub (1705-1780), a pupil of Boerhaave, was professor of chemistry and medicine in Leyden. His *Institutes of Medical Pathology* was for a long time a favorite textbook. He claimed that Haller's irritability is due to a pathologic increase of "vital power." The book before us contains reprints of his *Sermo Academicus de Regimine Mentis Quod Medicorum est* (The Influence of the Soul in Healing), Leyden, 1747, in Latin and a fresh German translation by L. Hellmann of the Dutch edition in 1775.

J. L. C. Schroeder van der Kolk (1797-1862) is represented by a reprint in the original Dutch and in the German translation by J. F. H. Albers of his address in 1835 entitled *On the Difference Between the Dead Forces of Nature, Vital Forces and Soul*.

Portraits of the three physicians and the title pages of their publications are reproduced. F. M. G. De Feyfer writes a comprehensive introduction in which he reviews the various forms of vitalism in medicine from ancient times down to our own days. All who are interested in the doctrines of vitalism—the belief in a supranatural power or living principle which is not the function or manifestation of matter—will welcome this volume, which is a valuable addition to the literature of medical history.

Surgical Pathology of the Skin, Fascia, Muscles, Tendons, Blood and Lymph Vessels. By Arthur E. Hertzler, M.D., Professor of Surgery, University of Kansas. Hertzler's Monographs on Surgical Pathology. Cloth. Price, \$5. Pp. 301, with 260 illustrations. Philadelphia: J. B. Lippincott Company, 1931.

This is a new volume of Hertzler's monographs and deals with the surgical pathology of the skin, fascia, muscles, tendons, blood and lymph vessels. The book is divided into three parts. Part I deals entirely with the diseases of the skin. Part II deals with diseases of the fascia, muscles and tendons, and part III considers diseases of the blood and lymph vessels. A little more than half of the volume is devoted to diseases of the skin. Of the ten chapters in the work, five are devoted to the skin. The author has found that in his clinic more patients present themselves with hopeless malignant growths the result of neglected or maltreated simple lesions of the skin than from cancer of the uterus, mammary gland or lip. He emphasizes that adequate early treatment of these simple lesions would rid these patients of their disease but that only too often this has not been done and the patient comes because of recurrence. He points out that it is the tiny lesions which are important and are serious menaces to the patient, with ultimate danger to his life. In this connection and for this reason, melanotic lesions have received special attention. He has attempted to classify them to harmonize with his clinical experience. He says that algebraic symbols would be quite as useful as the terms now employed, and that if one can clarify the clinical problems by making subdivisions, on either a morphologic or a clinical basis, he is justified in doing so even though the fundamental anatomic factors remain obscure. He believes that Virchow was right, in a measure, in dividing melanomas into two groups, those derived from epithelial cells and those derived from connective tissue. The author believes one might better say that the one tends toward development into epithelial and the other into connective tissue, though melanomas are never epithelial and never connective in origin. They are derivatives of embryonal rests and remain outlaws throughout life. One quality of melanotic tumors, he says, has failed of general recognition. That is that the connective tissue surrounding the nevus cells never attains the full development of acidophilic tissue. The degree of this abnormality is a measure of the likelihood of subsequent malignant development. As a useful clinical classification he divides melanomas into:

- A. Benign melanotic lesions:
 - 1. Multiple.
 - 2. Solitary.
- B. Malignant melanotic lesions:
 - 1. Melanomas:
 - (a) Spheroidal cell (melanocarcinomas).
 - (b) Spindle cell (melanosarcomas).
 - 2. Chromomas:
 - (a) Intradermic.
 - (b) Subdermic.

Each of these is described in detail, both clinically and from the pathologic standpoint. The points are emphasized by reproductions of photographs of actual cases and photomicrographs of sections from these cases.

The chapter on malignant tumors of the fascia is important. The author points out that the commonest of all tumors of the fascia are malignant from the beginning, seldom justify so mild a term as lipomyxosarcoma at any stage, and are pure sarcomas from the beginning. Usually they are of neurogenic origin. These neurogenic sarcomas often are removed surgically by a mere local operation by some physician unfamiliar with their real nature. Sooner or later, local recurrence brings the patient back, and a second, wider, local removal is performed as the local recurrence is his first intimation of the malignant character of the growth. Wide local recurrence followed by metastases in the lungs usually follows. These cases call for

radical amputation. The author properly states that the literature bearing on these tumors is surprisingly meager and that this may account for the mistreatment these tumors generally receive.

The concluding chapter of the volume discusses thrombosis and embolism. In discussing the genesis of thrombosis, he sets forth the results of his experimental studies. His clinical experience has emphasized the fundamental correctness of his conclusions: never ligate a vein when in a state of reaction.

The entire volume is essentially practical. The author has fulfilled his purpose, which is to present the result of observations in the clinic or operating room, with only incidental discussions of observations in the laboratory.

The volume is well illustrated. At the end of each chapter there are references to the literature. The book is written in a direct manner, is interesting to read, and contains a mass of valuable practical clinical facts.

National Health Insurance. By G. F. McCleary, M.D., Deputy Senior Medical Officer, Ministry of Health. Cloth. Price, 6s. Pp. 185. London: H. K. Lewis & Company, Ltd., 1932.

This is an authoritative factual study of health insurance. The brief historical chapters give an excellent, compact view of the origins of such insurance and its tendency to expand in coverage and extent of benefits within each country and to more and more nations. "At first the chief object of insurance was to compensate the disabled worker for loss of wages. . . . The modern tendency is to regard sickness insurance as a means of restoring the disabled worker to health and working capacity." Therefore it becomes rather a medical service, but operated by institutions organized for the earlier purposes. As the medical services increase in importance, conflicts between the physicians and the lay institutions grow sharper. In the more recently established systems of England, France, Norway and some other countries the medical organizations have been able to do away with many of the causes of friction and secure more power in directing the medical service. In these countries there is usually free choice of physician, and questions of medical standards and discipline are largely or wholly matters of the professional association. The English system is described in detail and this constitutes the best account of its workings available. The final summing up is favorable to health insurance, but everywhere the author's conclusions and opinions are separated from his statements of facts and, in the latter, unfavorable as well as favorable features are impartially described.

Ten Years of Obstetrics and Gynecology in Private Practice: A Clinical Report of 1750 Obstetrical and 1345 Gynecological Cases, with Comparative Analyses of Many of the Larger Groups, and Detailed Case Histories of Some of the More Important and Less Common Conditions. By John L. Rothrock, A.B., M.D., F.A.C.S. Cloth. Price, \$3. Pp. 209, with 9 illustrations. New York: Paul B. Hoeber, Inc., 1933.

The cases reported and analyzed were attended by the author in the ten year period 1921-1931. The report was prepared in order that comparative figures might be drawn exclusively from private material, a source seldom available. The usual statistical reports are compiled from records of public hospitals, deal with a poorer class of patients, and represent the work of several individuals. Brief sketches of the commoner obstetric problems are presented, with illustrative case histories and short discussions. Detailed treatment of various complications, however, is usually lacking. The view expressed by the author on the treatment of puerperal eclampsia is unfortunate, as he states that "it makes little difference what method one employs, the results will be about the same." One need not review the results of the Stroganoff method versus those following cesarean section in eclampsia to realize the utter folly of such remarks. The author discusses breech presentation in an interesting and instructive manner, but one feels that there is a lack of completeness in all his presentations. This is particularly true of his treatment of the subject of anesthesia in labor. The Kielland forceps are advocated and apparently proved most satisfactory for the mid and high stations of the head. The author also advises the use of the vectis, an obsolete instrument used to aid rotation of the head in occiput posterior presentation. This may prove to be a worthy suggestion, as occiput posterior positions are indeed the bane of the obstetrician's practice. Cesarean section was performed in ninety-five cases in this series, or 5.6 per cent

of the total deliveries. The classic operation was performed thirty-seven times, transperitoneal (low) eleven times and extraperitoneal forty-four times. There was one Porro operation. The transperitoneal technic followed was that described by Hirst, in which the parietal and visceral peritoneum is united before the uterus is opened. The disadvantage of this procedure is the firm adhesion of the uterus to the anterior abdominal wall, a sequel that is not observed following the usual low cervical operation. In two instances during extraperitoneal section the bladder was perforated. In spite of this danger, the author favors this technic as the method of choice in cephalic presentations requiring cesarean section. General anesthesia was used as a routine, usually nitrous oxide and oxygen; local anesthesia was employed once for cesarean section. There was only one maternal death (1.05 per cent) following classic section for premature detachment of the placenta, death occurring from postpartum hemorrhage. Four stillbirths (4.2 per cent) occurred in the cesarean series, two of which were premature. The second portion of the book deals with gynecologic material, which is treated even more briefly than the obstetric. There is too much generalization and too little specific information, especially in relation to treatment. A statistical summary closes each section, revealing an interesting material observed by the author in a decade. It is indeed commendable that the doctor "takes stock" and makes a critical analysis of his work over a period of years, a labor that must prove most profitable to himself and interesting to others in the same field of practice.

Entstehung, Erkennung und Behandlung plötzlich einsetzender Kreislaufstörungen, mit einem Sonder Vortrag, Tod als Operationsfolge. II. Ärztlicher Fortbildungskursus in Bad Salzungen, 7. und 8. Mai 1932. Boards. Price, 6 marks. Pp. 92, with 2 illustrations. Leipzig: Georg Thieme, 1932.

This small volume is made up of the papers of a symposium on vascular accidents of the pulmonary and general circulation, including those involving the heart, eye and central nervous system, as well as a consideration of shock and death following surgical operations. Each of this series of papers is a short review of the essential points in the subject discussed and can be read with interest and profit, especially that of Klapp on thrombosis and embolism and that of Hiller on apoplexy. The conceptions expressed agree well with those generally accepted in the United States, with few exceptions. The most notable impression gained by the reader is the importance placed on vascular spasm in the pathogenesis of all types of vascular disease. Angiospasm is spoken of with assurance as the cause of many of the visual and cerebral symptoms accompanying vascular disturbances in nephritis, migraine, eclampsia and headaches of other origin, as well as in cerebral vascular accidents. The title of the book definitely describes the subject matter. It is unusual as well as interesting to find included in one volume so many diverse subjects relating to nearly all the special fields of medicine, which are yet so closely related by the etiology and pathogenesis of the lesions in that all are primarily diseases of the cardiovascular system. It impresses by the emphasis laid on the physiology of the circulatory system and its application in all the special fields of medicine.

Procedures in Tuberculosis Control for the Dispensary, Home and Sanatorium. By Benjamin Goldberg, M.D., F.A.C.P., F.A.P.H.A., Associate Professor of Medicine, University of Illinois. With a chapter on Sanatorium Planning by Thomas B. Kidner, and an Introduction by David J. Davis, M.D., Ph.D., Dean of the College of Medicine, University of Illinois, Chicago. Cloth. Price, \$4. Pp. 373, with 54 illustrations. Philadelphia: F. A. Davis Company, 1933.

The subject matter of this volume has been ready for compiling and editing for many years, and in most respects it has been creditably performed by the author. An introduction by Dr. D. J. Davis, and a chapter on sanatorium planning near the end by Thomas B. Kidner, clothe the work with high standing and authority. The book proper is divided into three main sections, involving the dispensary and the sanatorium system used in Chicago, with a smaller section on home treatment in between. The chapters on medical education and the general hospital and tuberculosis merit high praise. The housing of the tuberculous in special wings of general hospitals, although appearing radical at present, will undoubtedly be an accomplished fact within the coming generation. Most of the material, however, is similar to that appearing in the bulletins and records of the Chicago Municipal Tuberculosis Sanitarium

since its founding in 1915, with little or no mention of even the authorities who have contributed to the development of the institution. The impression is almost inescapable that the author himself was the dominant force in the movement, although the records appear to show that his rôle was more or less ephemeral. Such an unfortunate impression of "tree-carving" tends to detract from a valuable work of trail-blazing. The publisher's work is standard in every respect.

Le pneumothorax bilatéral simultané. Par M. Ascoli, directeur de la clinique médicale de l'Université de Palerme, et M. Lucacer, assistant de la clinique médicale l'Université de Palerme. Préface de F. Dumarest. Collection médecine et chirurgie pratiques, no. 54. Paper. Price, 22 francs. Pp. 102, with illustrations. Paris: Masson & Cie, 1932.

Twenty years has passed since Ascoli and Faguoli first proposed and practiced compression of the diseased portion only of the lung by low intrapleural pressures and, its corollary, bilateral simultaneous pneumothorax. The opposition of Forlanini, who advised complete collapse of the diseased lung and restricted it to one-sided disease, delayed the development of this method. Since then, the physiology of respiration has become better understood and the indications for the choice of patients suitable for bilateral collapse have improved. Ascoli and Lucacer in this little book furnish, as Dumarest says in the preface, the "indispensable guide" to phthisiotherapists who employ this treatment. As the authors caution, the treatment should be reserved to patients in a fully equipped institution and to specialists in the care of the tuberculous. The basic principles of the physiopathology of the respiratory function are thoroughly discussed and to one who has not followed recent literature present some surprising new ideas. The best indication for the method occurs when, after compression of the more diseased lung, new or old lesions become active in the opposite lung. Bilateral pneumothorax, therefore, increases the possibility of success of unilateral collapse of the lung. The contraindications, technic, conduction of treatment and complications are fully discussed. The authors do not include their own figures in the results, which are good in about 25 per cent of the cases. In an appendix they discuss primary contralateral pneumothorax, initiated by Ascoli when pleural adhesions prevent pneumothorax of the actively diseased side. Compression of the so-called good lung will sometimes result in improvement of the lesion on the active side, especially when it is combined with a phrenicectomy on the latter side.

How Do Physicians and Patients Like the Middle-Rate Plan for Hospital Care? The Second Year's Experience of the Baker Memorial Unit of the Massachusetts General Hospital, Boston. Introductory Statement. By C. Rufus Rorem, Ph.D. Attitudes of Boston Physicians Toward the Baker Memorial. By Clyde D. Frost, M.D. The People Admitted to the Baker Memorial. By Elizabeth Richards Day. Paper. Pp. 53. Chicago: Julius Rosenwald Fund, 1932.

The middle-rate plan for hospital patients was placed in operation by the medical staff and administration of the Baker Memorial Unit of the Massachusetts General Hospital, Boston, March 3, 1930. It is stated that this plan is essentially a method by which the physician, patient and hospital unite to reduce the total cost to the patient for hospitalized illnesses without interfering with the quality of service. In a summary of the first year's report, the general principles of the middle-rate plan were summarized as: (1) offering moderate rates for bed care and for special services in a hospital unit large enough to facilitate economical administration; (2) arranging cooperation with the medical staff whereby moderate fees were charged for professional services; (3) unifying, by consent of the medical staff, all financial dealings with the patient under the hospital administration, so that the patient is not presented with two or more independent bills for hospital and professional care respectively, but with a single bill, collected by the hospital, which in turn passes over to the physician his agreed fee; (4) endeavoring to minimize the amount and the costs of special nursing; (5) seeking to provide all the service at cost, without charity and without profit. For the year ended Feb. 29, 1932, 3,326 patients paid an average of \$63 each to the attending medical staff. Special nursing cost averaged \$18.44 for the entire number of patients; but, since only \$19 required such service, the average was raised to \$116 per case. It is stated that twelve physicians believed that the scale of fees fixed by the plan was satisfactory. Three, however, qualified the statement by saying "except for special cases." The chief criticism

which was frequently expressed was concerning the limited fee for long term cases and those requiring frequent consultation. It is plain that the physicians of Boston have assumed a liberal attitude toward this experiment. At first some objected to the plan on the ground that it tended to lower professional fees. Now they admit that the public deserves good medical care at prices it can afford to pay. The authors state that physicians serving at Baker Memorial Hospital and representative medical men in Metropolitan Boston concur in the belief that the middle-rate plan is a valuable experiment and that if it is successful it is likely to be undertaken elsewhere. In another section of the report it is stated that during the past two years a similar plan has been introduced at Grace Hospital, Detroit, Sydenham and Mount Sinai hospitals, New York, and Morton Memorial Infirmary, Louisville, Ky. It appears from the financial statement that the facilities provided under this plan have not been utilized sufficiently to make the plan self sustaining. The deficit during the first year of operation was \$87,143.66. The second year the deficit was \$87,566.96. This means that the ratio of income from patients to the net operating expenses was 74.1 per cent the first year and 81 per cent the second year. Under such conditions one cannot understand how a hospital can continue a plan of this nature without endowment or other means of meeting the deficit.

Arbeit und Gesundheit: Sozialmedizinische Schriftenreihe aus dem Gebiete des Reichsarbeitsministeriums. Herausgegeben von Professor Dr. Martineck, Ministerialdirektor im Reichsarbeitsministerium. Heft 22: Nervöse und seelische Störungen bei Teilnehmern am Weltkrieg, ihre ärztliche und rechtliche Beurteilung. Von Dr. Karl Weller, Facharzt für Psychiatrie. Teil 1: Nervöse und seelische Störungen psychogener und funktioneller Art. Paper. Price, 6 marks. Pp. 222, with 30 illustrations. Leipzig: Georg Thieme, 1933.

Dr. Weller has made an intensive study of organic and functional mental diseases among the participants in the World War (Germany). His study is to be embraced in two volumes. This monograph is the first volume; in it the author gives consideration to nervous and mental disorders, organic and functional. He also discusses the legal aspect and shows familiarity with both subjects. In the second volume, which will follow at a later date, the dementias will be discussed. The purpose of the present volume is to help the examiners for the German veterans' bureau to diagnose correctly claimants with nervous and mental disorders and to evaluate the influence that service in the World War had on these diseases and also to what extent the claimants are disabled for gainful occupation. The author has reviewed 200,000 case records from a district in Bavaria, which included the city of Munich and surrounding counties. He gives a short treatise on the different types of nervous and mental disorders. It is his opinion that the activities and incidents (excluding direct nerve and brain injuries) during the World War, in most of the cases, were not the cause of the mental upset but just aggravating factors in persons who had a defective personality make-up. He reviewed the psychiatric experience of former wars (the war of 1870-1871, the Russo-Japanese war and the Balkan war of 1912-1913). Part of the book is used to detail his opinion regarding legislation for disabled service-connected veterans, especially the procedure of handling the applicants and the part the examining physician plays in the whole procedure. There is a short discussion on hyperthyroidism and the associated nervous and mental disorders. Reference is made to the influence of alcohol, nicotine and syphilis on mental disorders. There is a paragraph concerning somatic diseases accompanied by mental symptoms. The author mentions as a fact that the outlook for compensation may delay in many instances the improvement of the claimant's symptoms; he gives it a special term, "rentenneurose" (compensation neurosis). In the summary he states that all the disabilities seem to be magnified in a claimant if there is a prospect of obtaining compensation and he advocates legislation to make it imperative for the management of industrial activities to employ a small percentage of partially disabled war veterans in their plants and give them full pay even if their work is below par. It appears that he hopes in that way to develop a mental attitude of self dependence in the veteran and lessen his feeling for the need of paternalistic government aid. The monograph has little appeal for the general practitioner. Its chief interest lies in the field of those engaged in the adjudication of the ex-service man's problems. The book gives evi-

dence of painstaking investigation and careful thought in its preparation. There are thirty graphic charts and many statistical tables in the book, which are helpful in interpreting the text.

British Experience with Unemployment Insurance: A Summary of Evidence Taken by the Royal Commission on Unemployment Insurance. Part V.: Financial Aspects. Monograph 11 in a Series on Social Insurance. Paper. Pp. 47. New York: Metropolitan Life Insurance Company, 1933.

British Experience with Unemployment Insurance: A Summary of Evidence Taken by the Royal Commission on Unemployment Insurance. Part VI.: Economic and Social Effects. Monograph 12 in a Series on Social Insurance. Paper. Pp. 54. New York: Metropolitan Life Insurance Company, [n. d.].

These monographs give a compact survey of the exhaustive evidence taken and reports of the royal commission. There has been constant change in the direction of extension of benefits and expansion of coverage until deficits compelled some restrictions in 1931. The committee was forced to recognize that "it is impossible satisfactorily to base the current finances of a scheme of insurance against unemployment upon a theoretical estimate of the average rate of employment over a number of years." The question of meeting the deficits caused by the present depression received a number of answers, all admittedly unsatisfactory. There was much disagreement as to the economic effects on "mobility of labor," "part time employment," "rigidity of wage rates," and "poor relief by local authorities." It was recognized that insurance might "encourage industries to maintain reserves in excess of their maximum requirements, at the expense of the insurance fund." Employers insisted that insurance maintained wages so high and increased cost of production through contributions so as to affect international competition. There seemed to be general agreement only on the general proposition that insurance offers a far better way of providing relief for the unemployed than anything else that has been suggested and therefore no one proposed its abolition. Both majority and minority reports, while offering many minor changes, did not propose any drastic alterations in the existing law.

Diagnóstico y tratamiento del cáncer. Editado por la Liga contra el Cáncer. Paper. Pp. 255, with illustrations. Havana: La casa Montalvo-Cardenas, 1932.

This treatise, edited by the League Against Cancer of Havana, contains contributions of various authors on the different phases of the diagnosis and treatment of cancer. The first chapter, by Martinez, presents a brief general review of the various theories of causation. There follows a discussion of the pathologic anatomy of tumors and the indications, technic and dangers of biopsy. The chapters on x-rays and radium present a brief review of the development of these therapeutic agents, with their physical and biologic properties. Electrodesiccation and electrocoagulation are briefly discussed. The chapter on the treatment of cancer affecting various organs presents the standard methods of treatment but omits the most recent advances in radiotherapy, particularly such developments as the Coutard technic and radium bomb therapy. This compilation on the diagnosis and treatment of cancer constitutes an accurate and brief review of the subject which should be of interest to the general practitioner. In this respect it fulfils its purpose; namely, the education of the profession in the early diagnosis and treatment of neoplastic disease.

Illustrated Primer on Fractures. Prepared by the Cooperative Committee on Fractures Under Auspices of Section on Surgery, General and Abdominal, and Section on Orthopedic Surgery, in Cooperation with Department of Scientific Exhibit of the American Medical Association. Third edition. Fabrikoid. Price, \$1. Pp. 67, with illustrations. Chicago: American Medical Association, 1933.

The third edition of this book (the first and second editions have been reviewed in this department) includes material shown in the fracture exhibits at five annual sessions of the American Medical Association, from 1927 to 1931. Many of the illustrations have been modified or redrawn. All of the legends have been reedited and some of them revised. New material includes fracture of the forearm, carpus, metacarpus and phalanges. The material has been presented in excellent form according to the most approved teaching methods. In addition to fractures, the book contains a discussion on dislocations at the shoulder. The book should be in the library of every practicing physician and surgeon.

Medicolegal

Workmen's Compensation Acts: Award of Compensation as Bar to Malpractice Suit.—Under the Michigan workmen's compensation act (Compiled Laws, 1929, sec. 8454), an employee who is injured under circumstances making some person other than his employer liable for the injury may sue that person to recover damages or may obtain compensation under the act, but he cannot do both. If the employee obtains compensation under the act, his right to recover damages from the person responsible for the injury vests in his employer or his employer's insurer, whoever paid the statutory compensation, who may then sue the responsible person for the damages for which the injured employee might otherwise have sued. Because of this statute, said the Supreme Court of Michigan, an injured employee whose injury has been aggravated by the malpractice of a physician may not, after he has been awarded compensation from his employer, sue the physician for malpractice. The amount the workman can recover under the workmen's compensation act is less than he could recover by suing the physician, and it seems unfair that the physician in such a case should benefit by the provisions of the act, to the employee's disadvantage. That, however, is a matter for the legislature to consider; courts must adhere to the provisions of the laws as enacted.

The absence from the Michigan workmen's compensation act of an express statement concerning liability for the aggravation of an industrial injury by the subsequent negligence of a third person creates some ambiguity. Under similar acts in other jurisdictions, the compensation that an employer must pay his injured employee includes compensation for the consequences of such aggravation of the injury as has been caused by malpractice, in addition to compensation for the original injury. The Supreme Court of Michigan looked with favor on that plan, in *Oleszek v. Ford Motor Co.*, 217 Mich. 318, 186 N. W. 719. If and when an employer must pay compensation for the aggravation of the industrial injury by a physician's malpractice, there is no reason why the employee's right to sue the physician should not vest in the employer, just as the employee's right to sue the responsible third person for the original injuries vests in the employer.

It was urged that an employee might be awarded compensation before he discovered the effects of the malpractice and thus he foreclosed from his remedy against the physician. The acceptance of compensation for the original injury, said the Supreme Court, does not constitute an election under the statute. The employee retains his rights against the third person who has injured him, until he has elected to accept compensation, not only for the original injury, but also for the injury resulting from the malpractice. If the evidence of injury resulting from malpractice is not discovered before the expiration of the time limit within which compensation may be claimed under the workmen's compensation act, the employee still has his rights against the physician, even though he may have accepted compensation for the original injury, as distinguished from damages for the aggravation of that injury by malpractice.—*Overbeck v. Nier* (Mich.), 246 N. W. 196; *Paydu v. De Witt* (Mich.), 246 N. W. 199.

Insurance: Squeezing a Pimple as An "Accidental" Cause of Death.—An insurance policy provided double indemnity if death occurred as a result of bodily injury effected solely through external, violent and accidental means. The insured squeezed a pimple on his face, septicemia developed, pneumonia followed, and he died. In the opinion of the Supreme Court of Minnesota, the evidence warranted the conclusion that the pressure on the pimple for the purpose of expressing the pus was external, violent and accidental means within the terms of the policy and resulted in bodily injury. The insurer pointed out that double indemnity was not payable if death resulted from bodily or mental infirmity or disease in any form, and claimed that the death resulted from an existing infirmity, the pimple. True, said the court, the insured had a pimple, but pimples are common and almost always inconsequential and harmless. Had it not been for the rupturing of the sac of the pimple by pressure, the condition that caused the insured's

death would not have arisen. The admission of the testimony of a physician, over objection, that the insured told him that the pimple had been squeezed, was erroneous. A physician may testify as to the present physical condition of his patient, and what the patient said concerning that condition, particularly as to ills, pains and symptoms arising from an accident or sickness, but anything concerning the nature of past events, such as the cause of the injury or sickness, is inadmissible in an action to recover damages for an injury.—*Stroumen v. Prudential Ins. Co.* (Minn.), 245 N. W. 632.

When a Physiotherapist Practices Medicine.—The defendant, Mari, was licensed to practice physiotherapy in the state of New York. The statute under which he was licensed provides that a license issued under its authority shall authorize the licensee to treat diseases under the supervision of duly licensed physicians but shall not permit him to practice medicine. A rule promulgated by the Board of Regents of New York requires a registered physiotherapist to keep a written prescription, signed by a licensed physician, for each patient treated by the physiotherapist, which prescription shall state the diagnosis and the type of treatment ordered. Mari's office and office equipment had all the evidences of a physician's office. A policewoman, who subsequently appeared as a witness for the prosecution, called there. The defendant told her that he was Dr. Mari. At his request she described symptoms. He took her family history. He made "an intimate personal examination," tested her reflexes, looked into her throat and palpated her abdomen. He examined a specimen of her urine and told her he found a trace of albumin in it. He took her blood pressure and was about to take blood for a blood test, but his patient objected and he desisted. Mari then had his patient place her hands under a thermolite. This treatment had continued for about a half hour, when a Dr. Andrei, a licensed physician, entered. He tried to examine the patient, but she refused his services. He nevertheless wrote a prescription for her. Mari was convicted of the illegal practice of medicine, the conviction was affirmed by the appellate division, and he appealed to the Court of Appeals of New York.

To account for the presence of Dr. Andrei in Mari's office, said the Court of Appeals, we must take as true the evidence showing that he was summoned by or for the defendant, Mari. It may be assumed, said the court, that Dr. Andrei telephoned to Mari instructions what to do while awaiting his arrival; it is not contended that such a practice is unusual, but such a practice has no sanction in law. To say that the statute contemplates such a procedure would be to open the door so wide to evasion as to leave the statute a mere futility. It is no defense that Mari acted in good faith or did only what was customary. The only question is whether he violated the statute, and of this there seems to be no doubt. The judgment of conviction was affirmed.—*People v. Mari* (N. Y.), 183 N. E. 858.

Injunction Not Available to Prevent Practice by Holder of Unrevoked License.—By an act of the Tennessee legislature, Private Acts of Tennessee, 1923, chapter 679, Millard I. Hartley was licensed to practice medicine. All persons who at the time of the passage of this act had practiced medicine for ten years or more in any Tennessee county or counties with not less than 12,225 nor more than 12,235 population, according to the federal census of 1920, were licensed by the act to practice within such counties. The act required the state board of medical examiners to issue to any person proving that he was entitled thereto a certificate licensing him so to practice. Hartley had practiced in Johnson and Carter counties for more than twenty years, and the board therefore issued to him a "certificate of permanent license," which Hartley duly recorded in the counties in which he had practiced.

At a later date, the state of Tennessee, at the instance of the Tennessee state board of medical examiners, filed a bill to enjoin Hartley from practicing medicine in the state. This bill was filed under authority of an act entitled An Act to define and provide for the abatement of certain public nuisances, Public Acts of 1919, chapter 158, which declares that the practice of any profession is a public nuisance if the practice of it without a license is prohibited by law and the practitioner holds no license. The chancery court of Carter county, in which the bill was filed, dismissed it, and the state appealed to

the Supreme Court of Tennessee. The bill was based on the theory that Hartley's license was void because the act by which he was licensed was itself unconstitutional and void. The Supreme Court, without considering the constitutionality of the act, rejected this theory. The issuance of a license, it said, is authority for the licentiate to practice. The bill had been dismissed in the court below on the theory that the state board of medical examiners had issued to Hartley a certificate of permanent license and was therefore estopped from denying its validity; but on this theory of the case the court declined to pass. Nor would it pass on the right of the board to cancel or revoke Hartley's license, if the license had been wrongfully issued, since the cancellation or revocation of that license was not involved in the proceeding. The act of 1919, authorizing the issue of injunctions to prevent unlawful practice, said the court, applies only to a person engaged in practice without a license, and since Hartley had a license that the board had issued and had not revoked, the act had no application to him. When a board clothed with exclusive power to issue a license exercises that power, the licentiate may exercise the privilege conferred by his license, until his authority to act is lawfully revoked.—*State ex rel, State Board of Medical Examiners v. Hartley (Tenn.)*, 54 S. W. (2d) 960.

Workmen's Compensation Acts: Compensation for Loss of Remaining Eye.—In childhood, the petitioner lost the vision of his left eye from disease. His right eye was destroyed at the defendant's plant by an accident arising out of and in the course of petitioner's employment. The industrial injury, plus the loss of the left eye during childhood, resulted in blindness. The trial court awarded compensation only for the loss of the eye destroyed by the industrial injury and the employee appealed to the Supreme Court of Tennessee. He contended that he should have been awarded compensation for permanent total disability. The employee's permanent total disability, said the Supreme Court, was not the result of an injury but of an injury that destroyed the vision of one eye, plus the affliction that destroyed the vision of the other eye. The statute, prescribing as it does compensation for industrial injury only and measuring it by the specific loss of a member regardless of the effect on capacity to work, forbids the addition of the preexisting loss of a member by disease to a subsequent loss of a member through industrial injury, for the purpose of transferring the measure of compensation from the lower to the higher schedule. In prescribing compensation for injury to vision, the legislature did not consider the organs of sight as a unit. Each eye was considered separately, and compensation related to its specific loss; the loss of one eye constituting permanent partial disability and the loss of both eyes constituting total permanent disability. The judgment of the trial court was therefore affirmed.—*Catlett v. Chattanooga Handle Co. (Tenn.)*, 55 S. W. (2d.) 257.

Accident Insurance: Sodium Fluoride Poisoning; "Visible Contusion or Wound" Construed.—Schenkat took a quantity of sodium fluoride accidentally, mistaking it for epsom salt. Three hours after taking the poison he died. He was insured under a double indemnity policy, payable if death should result from bodily injury effected solely through external, violent and accidental means, independently and exclusively of all other causes. The policy provided that, except in case of drowning or asphyxiation, the external, violent and accidental means which caused death should be evidenced by a "visible contusion or wound on the exterior of the body." Sahara Schenkat sued the insurer, to recover benefits payable under the policy. At the conclusion of the trial, on a directed verdict in favor of the plaintiff, the court entered judgment, and the insurer appealed to the U. S. circuit court of appeals, seventh circuit.

The evidence showed that the sodium fluoride taken by Schenkat, the insured, produced the following effects: "Insured became violently ill; was nauseated; perspired freely; vomited blood; lips and tongue swollen; became pale; body discolored; marked paralysis; abdomen rigid; suffered great pain." The U. S. circuit court of appeals quoted *Thompson v. Loyal Prot. Ass'n*, 167 Mich. 31, 132 N. W. 554, in which the Supreme Court of Michigan held that the following definition of a wound, given by the trial court for the guidance of the jury,

was correct, namely: "In legal medicine the word 'wounds' means injuries of every description that affect either the hard or soft parts of the body, and it comprehends bruises, contusions, fractures, luxations, etc. In law the word means any lesion of the body." "We hold," said the circuit court of appeals, "that the plaintiff was entitled to recover under the admitted facts of this case. The insured died as a direct result of bodily injury effected solely through external, violent and accidental means, independently and exclusively of all other causes." As evidence of such a death, the policy required "a visible contusion or wound on the exterior of the body." We hold, said the court, that this evidence was present.—*Mutual Life Ins. Co. of New York v. Schenkat (U. S. C. C. A.)*, 62 Fed. (2d) 236.

Evidence: Judicial Notice that Morphine is a Derivative of Opium.—The appellant in this case was convicted on an information which charged her with the sale of six ounces of morphine. She appealed on the ground that the trial court erred in overruling her demurrer by which she contended that the indictment under which she was convicted was fatally defective in that it did not allege that morphine is a salt or a derivative of opium. The United States circuit court of appeals, fifth circuit, held that the allegation was not necessary, since the trial court was entitled to take judicial notice of the fact that morphine is a derivative of opium.—*James v. United States*, 61 Fed. (2d) 912.

Insanity: Admissibility of Lay Testimony.—The opinions of nonexpert witnesses as to the insanity, the mental condition and the capacity of a person charged with crime to distinguish between right and wrong are admissible when such witnesses have had opportunities to observe or converse with such person and when they state their reasons and the facts observed on which they base their opinions. Such opinions, to be admissible, must be limited to conclusions drawn from the specific facts thus disclosed. It is for the jury to determine the weight to be given to such testimony.—*People v. Witte (Ill.)*, 183 N. E. 622.

Society Proceedings

COMING MEETINGS

- American Academy of Ophthalmology and Otolaryngology, Boston, September 18-22. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Executive Secretary.
- American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Lucerne-in-Quebec, Canada, September 11-14. Dr. Magnus A. Tate, 19 West Seventh Street, Cincinnati, Secretary.
- American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
- American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.
- American Roentgen Ray Society, Chicago, September 25-30. Dr. Eugene P. Fendergrass, 3400 Spruce Street, Philadelphia, Secretary.
- Association of Military Surgeons of the United States, Chicago, September 25-27. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.
- Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.
- Delaware, Medical Society of, Wilmington, September 26-27. Dr. W. O. La Motte, 604 Medical Arts Building, Wilmington, Secretary.
- Idaho State Medical Association, Twin Falls, September 18-19. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
- Indiana State Medical Association, French Lick, September 25-27. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.
- Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
- Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
- National Medical Association, Chicago, August 13-14. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, New Jersey, General Secretary.
- Nevada State Medical Association, Las Vegas, September 29-30. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.
- New England Surgical Society, Boston, September 29-30. Dr. J. M. Birnie, 14 Chestnut Street, Springfield, Mass., Secretary.
- Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
- Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.
- Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
- Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

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Classification of Diseases of Lipoid Metabolism and Gaucher's Disease.

L. Pick, Berlin, Germany.—p. 453.

*Spontaneous Subarachnoid Hemorrhage. H. F. Dowling, Baltimore.—p. 469.

Use of Various Gases in Encephalography: Summary of Two Hundred and Ten Cases, Using Simultaneous Displacement Apparatus. F. Liberson, New York.—p. 478.

Neurologic Complications of Serum Sickness. J. B. Doyle, Los Angeles.—p. 484.

Congenital Hemihypertrophy: Report of Eight Cases. E. G. Wakefield and E. A. Hines, Jr., Rochester, Minn.—p. 493.

Hypoglycemic Convulsions with Hypoplasia of Pancreas. H. M. Winans, Dallas, Texas.—p. 500.

Use of Ephedrine During Spinal Anesthesia for Relief of Paralytic Ileus: Therapeutic Fallacy. A. M. Winograd, D. A. Hirsch and R. D. Barnard, Chicago.—p. 506.

Alleged Antagonism Between Digitalis and Diphtheria Toxin. H. Gold and Margaret M. Klumpp, New York, in collaboration with T. D. Slagle.—p. 509.

Acute Angiospastic Retinitis: Occurrence in Cases of Severe Hypertensive and Renal Disease. H. P. Wagener, N. W. Barker and C. F. Burke, Rochester, Minn.—p. 517.

Stenosis of Isthmus (Coarctation) of Aorta: Report of Three Cases with Remarks on Clinical Aspects. E. C. Eppinger and P. A. H. Midelfart, Boston.—p. 528.

*Simple Test for Capillary Resistance: "Flicking" Test. H. W. Jones and L. M. Tocantins, Philadelphia.—p. 535.

Studies of Anemia in Pregnancy: III. Etiologic Relationship of Gastric Secretory Defects and Dietary Deficiency to Hypochromic and Macrocytic (Pernicious) Anemias of Pregnancy and Treatment of These Conditions. M. B. Strauss and W. B. Castle, Boston.—p. 539.

*Agranulocytic Angina (Pernicious Leukopenia): Study Based on Eighteen Cases with Nine Necropsies. T. Fitz-Hugh, Jr., and B. I. Comroe, Philadelphia.—p. 552.

Diaphragmatic Hernia Associated with Secondary Anemia. K. D. Gardner, San Francisco.—p. 561.

*Parenteral Liver Extract Therapy in Treatment of Pellagra: Preliminary Report. R. L. Ramsdell and W. H. Magness, Dallas, Texas.—p. 568.

Spontaneous Subarachnoid Hemorrhage.—Dowling reports twelve cases of spontaneous subarachnoid hemorrhage. He concludes that: 1. A variety of pathologic conditions may cause hemorrhage into the subarachnoid space. 2. The syndrome may present a wide variety of symptoms and signs. 3. In every case of coma of unknown origin, a diagnostic spinal puncture is imperative. 4. Headache is a prominent and sometimes the only symptom. A diagnostic spinal puncture is therefore justified in any case of unexplained headache. The relief of intracranial pressure is the end sought for, whether by repeated spinal drainage, intravenous injections of hypertonic dextrose solution, or frequent doses of magnesium sulphate by mouth. The author's procedure is to perform one puncture for diagnostic purposes and no more for one week (unless marked pressure symptoms require it). He allows this time for the bleeding vessel to attain some degree of repair. After this the patient is given a puncture every three days (or oftener, in the presence of markedly increased intracranial pressure) until the fluid is colorless and the abnormal signs and symptoms have all disappeared. Intravenous injections of dextrose solution and drastic purgation are reserved for cases in which spinal drainage alone fails to give relief.

Simple Test for Capillary Resistance.—Jones and Tocantins describe a test for capillary resistance as follows: A tourniquet is applied from 2 to 3 inches above the elbow for five minutes as for the capillary resistance test. After four minutes, by flicking the middle finger against the distended vein three or four times petechiae appear. A control may be performed above the tourniquet by flicking with similar force, with a resultant erythema, but in most instances no petechiae appear. The authors performed the flicking test in 108 normal persons on

whom the capillary resistance test was performed. A comparison brought out the following points: Of the 108 persons, 55 had both negative capillary resistance and flicking tests; 33 had a negative capillary resistance test and also a positive flicking test. In each instance of a positive capillary resistance test there was also a positive flicking test. On the other hand, not all cases in which the flicking test was positive showed a positive capillary resistance test. The total in this group having positive flicking tests was 49 per cent of the normal group. There was an equal frequency of positive flicking tests in persons who gave a personal or family history of hemorrhagic disposition, as in those whose family or personal history was negative. Of thirty patients who gave a history of frequent nosebleed, eighteen showed a positive flicking test, whereas only thirteen showed a positive capillary resistance test. Of seven who stated that they bruised easily, four gave a positive flicking test, while only two gave a positive capillary resistance test.

Agranulocytic Angina.—Fitz-Hugh and Comroe report the data on eighteen cases of agranulocytic angina (pernicious leukopenia) with nine necropsies. All but four are dead, a mortality of 78 per cent. Of these four, only two can be considered cured. The most promising treatment, aside from blood transfusion, seems to be pentnucleotide, although the authors' experience with this substance has not been favorable. It seems more definitely to be useless in chronic cases of the disease. Necropsy study has shown in more than half of the cases thus examined a plentiful supply in the leukopoietic centers of the progenitors of the blood leukocytes. This virtual hyperplasia is in marked contrast to the profound peripheral leukopenia characteristic of the disease and strengthens the previous suggestion of a hypothesis of primary "maturation arrest" rather than primary "aplasia" to account for the hematologic phenomena of the disease. Agranulocytic angina (pernicious leukopenia) seems to be a disease entity, although it is so closely simulated by certain other conditions that its nosologic status may remain debatable until a potent specific therapy is available or some other pathognomonic feature is discovered.

Liver Extract in Treatment of Pellagra.—Ramsdell and Magness treated twenty-two unselected cases of pellagra with liver extract intramuscularly without a death and with rapid marked clinical improvement. They believe that severe cases in either young or old people, often fatal in a short time, can be treated successfully with liver extract. In patients with severe mental depression or marked gastro-intestinal disturbances who refuse to eat, this method of treatment will give quicker results than dietary treatment. It is simple and much easier to carry out than dietary treatment. A combination of liver extract and the usual dietary treatment would probably give better results than either alone. The time of hospitalization was greatly reduced. The treatment consisted of rest in bed and a general home diet without any additional foods containing vitamin G. Liver extract number 343 was given intramuscularly in daily doses of 2 cc. The usual site of injection was the deltoid or gluteal region. Practically no inconvenience was experienced from the injections. No other medication of any kind was used. There was a moderate amount of anemia in all cases. In a few cases in which reticulocyte counts were made the highest response was 4.7 per cent. Achlorhydria was present in 81 per cent.

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 *Productive-Cicatrical Syphilitic Disease of Pulmonary Artery. H. T. Karsner, Cleveland.—p. 367.
 *Effect of Drugs on Cardiac Standstill Induced by Pressure on Carotid Sinus. M. H. Nathanson, Minneapolis.—p. 387.
 Hyperplastic Sclerosis of Pulmonary Artery and Arterioles: Report of Case with Discussion of Pathogenesis. M. J. Sokoloff and H. L. Stewart, Philadelphia.—p. 403.
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 Inherent Sensitivity of Skin to Nickel and Cobalt (Allyed Elements in Group VIII, Periodic System). S. G. Stewart, Philadelphia.—p. 427.
 *Direct Comparison Between Specific and Nonspecific Serum Therapy for Type I Lobar Pneumonia. W. D. Sutliff, M. Finland and T. N. Hunnicutt, Boston.—p. 435.
 Nephritic Albuminuria. J. M. Hayman, Jr., and J. A. Bender, Cleveland.—p. 447.
 Spontaneous Subarachnoid Hemorrhage. A. L. Osterman, Wheeling, W. Va.—p. 452.
 *Oral Administration of Iron in Hypochromic Anemia. C. W. Heath, Boston.—p. 459.

Syphilitic Disease of Pulmonary Artery.—Karsner points out that productive-cicatrical syphilitic disease of the pulmonary artery, i. e., of the Döhle-Heller type, is extremely uncommon but occurs often enough to justify its consideration in clinical diagnosis. Eleven cases, anatomically proved by reasonably liberal interpretation, are now on record. Eight of these would be regarded as clearly established by the most exacting criteria. Gummatous types of lesion about equal the productive-cicatrical type in incidence, but this ratio may be changed as additional cases are reported. The proportion of productive-cicatrical to gummatous lesions is markedly higher in the aorta than in the pulmonary artery. All cases of productive-cicatrical lesions in the main stem of the pulmonary artery show local or diffuse dilatation of the vessel. Associated disease of the smaller pulmonary arteries is by no means constant. Thrombosis is more frequently associated with productive-cicatrical lesions of the pulmonary artery than with the same lesions of the aorta. The anatomic character of the lesion, as it affects both the aorta and the pulmonary artery, is essentially the same. Both the aorta and the pulmonary artery show productive-cicatrical lesions in about half the cases, but this does not of necessity mean that the disease in one vessel is an extension from the lesion in the other vessel. The disease affects the sexes about equally and has been found at the age extremes of 28 and 58 years, with the maximum incidence in the sixth decade. It is associated with cardiac difficulties and ultimately congestive heart failure, and it may exhibit a fairly characteristic roentgenogram. The most frequent murmur is a systolic murmur over the pulmonic area. Occlusion of a main branch of the pulmonary artery appears to have some relation to development and progress of pulmonary tuberculosis on the affected side.

Effect of Drugs on Cardiac Standstill.—Nathanson induced prolonged cardiac standstill by pressure on the carotid sinus in studying the effect of drugs on the rhythmic function of the human heart. He observed that the exaggerated carotid sinus reflex in man could be abolished by atropine. Epinephrine had a powerful effect on the impulse-initiating mechanism of the ventricles and consistently prevented cardiac standstill by the induction of an idioventricular rhythm. The stimulation of cardiac rhythmicity by the administration of epinephrine passed off within an hour after a subcutaneous injection. The effect returned after massage of the site of injection. Ephedrine

had no effect on a patient who repeatedly responded to epinephrine with initiation of a ventricular rhythm. Barium chloride abolished cardiac arrest in one patient by the formation of a new center in the auricles and in another by the development of an idioventricular rhythm. Calcium gluconate had no influence on the cardiac standstill. Digitalis definitely prolonged the period of cardiac standstill induced by pressure on the carotid sinus. This effect was abolished by atropine. Caffeine in a therapeutic dose had no effect on the duration of the cardiac arrest.

Comparison of Serum Therapy for Lobar Pneumonia.—Sutliff and his associates made a comparison between the symptomatic effects obtained in early type I lobar pneumonia by the administration of concentrated type-specific antipneumococcal serum and of horse serum globulin solution containing no specific antipneumococcal antibodies. The two preparations were prepared and administered in the same manner. In eight patients who first received nonspecific therapy and later received specific therapy, the greater effectiveness of the latter was obvious. In thirteen specifically treated patients who recovered, the duration of the disease was shorter than in the ten nonspecifically treated patients who recovered. Bacteremia was not present after therapy in any of the sixteen specifically treated patients, but bacteremia remained present in five, appeared for the first time in three and disappeared in two of thirteen nonspecifically treated patients. An extension of the consolidation of the lung was not observed after therapy in any of the sixteen specifically treated patients, but extensions were observed in five of thirteen patients receiving nonspecific therapy. A temporary symptomatic change was observed in each of the patients receiving nonspecific therapy, but the improvement in patients receiving specific therapy was permanent in every instance.

Iron in Hypochromic Anemia.—Heath analyzed eighty-four patients presenting hypochromic anemia with respect to the hematopoietic response to oral administration of iron. The percentage of utilization of orally administered iron, as determined by the total amount of iron gained in the circulating hemoglobin, varies inversely with the size of the dosage. It is possible, during the period of rapid gain of hemoglobin, when iron dosage orally is low, to have as much as 50 per cent of utilization. The average percentage of utilization of iron in the eighty-four patients during the entire period of recovery was 3.4. The percentage utilization of iron in idiopathic hypochromic anemia is less than in uncomplicated hypochromic anemia due to a chronic loss of blood. Patients with idiopathic hypochromic anemia usually require an indefinite continuation of iron therapy. The maintenance dose of iron in these cases is usually smaller than the dose required for maximum blood regeneration in the period of recovery. Toxic symptoms following the oral administration of iron and ammonium citrate not infrequently occur, but the maximum amount of iron administered orally in this form that is eventually tolerated by the patients is, as a rule, from 1 to 2 Gm. daily. The author feels that the influence that the addition of copper to iron may have in the treatment of hypochromic anemia in adults is at the most a minor one and that it is inadvisable to give copper salts as a routine measure in hypochromic anemia in adults. To be certain of giving adequate amounts of iron in hypochromic anemia, it is necessary to give large doses, such as 6 Gm. of iron and ammonium citrate daily, corresponding to 1 Gm. of metallic iron. Ferrous salts can be equally effective in somewhat smaller doses.

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 Progress in Otolaryngology. R. Levy, Denver.—p. 85.

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- Doctor, Patient and State. C. E. Cooper, Denver.—p. 122.
 Economic Do's and Don'ts for the Medical Society. H. T. Sethman, Denver.—p. 135.
 Shall We Legislate the Medical School and Its Hospitals into Oblivion? L. V. Tepley, Denver.—p. 139.
 Presence of Fluorine in Water Supply of Colorado and Its Relation to Occurrence of Mottled Enamel. C. H. Boissvain, Colorado Springs.—p. 142.

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 *Management of Some of the More Common Bladder Infections. E. R. Gelvin, Sioux City.—p. 200.
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 Strategic Position in Treatment of Syphilis. Mary H. Swan, Chicago.—p. 209.

Bladder Infections.—Gelvin, in tracing acute bladder infections, keeps the patient in bed, applies an ice bag to the suprapubic region, orders a bland diet, and gives fluids to the extent of comfort. He believes that at this stage a balsamic, combined with codeine or morphine, is the most soothing type of treatment, and accordingly he gives either 5 minims (0.3 cc.) of copaiba four times a day, or 5 minims of oil of sandal four times a day, and one-fourth grain (0.016 Gm.) of codeine every four hours, or one-fourth grain (0.016 Gm.) of morphine as required. Daily enemas should be given, and no instrumentation should be attempted during the first week. By the end of the first week irrigations of the bladder with solution of boric acid may be begun, followed by the instillation of 2 ounces (60 cc.) of a mixture of olive oil and oil of cajuput, or 16 ounces (475 cc.) of olive oil and 4 ounces (120 cc.) of oil of cajuput. During the second week, a rectal examination should be made or, if the patient is a woman, bimanual examination followed by a cystoscopic examination. If the infection is due to the colon bacillus, the author uses methenamine, which he considers almost specific, giving $7\frac{1}{2}$ grains (0.5 Gm.) with 5 grains (0.3 Gm.) of acid sodium phosphate every four hours until the urine is positive for formaldehyde. During the third and fourth weeks, urinary antiseptics should be continued; but, instead of following the boric acid solution irrigation with an oil mixture, 2 ounces of a 5 per cent solution of neosilvol should be instilled. During the fifth and sixth week, the 5 per cent solution of neosilvol should be increased to 7.5 per cent and later to 10 per cent. The bladder is usually entirely normal by the end of from seven to ten weeks. In chronic cystitis or chronic infections, the first step in the treatment is to look for the focus. The use of colonic irrigation or acidophilus culture will frequently clean the colon and lessen its flora. Any chronic constipation should be corrected by appropriate means. A urinary antiseptic should be given constantly, and methenamine is by far the best, unless the invading organism belongs to the coccus family. In using methenamine it is essential that enough be given to obtain free formaldehyde in the urine, the presence of which can easily be determined by adding to a few cubic centimeters of urine 5 minims (0.3 cc.) of a 0.5 per cent solution of sodium phenol hydrogen hydrochloride, 5 minims of a 0.5 per cent solution of sodium nitroperoxide, and an excess of sodium hydrate. A bluish green color is positive for formaldehyde.

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Copper Content of Urine.—Rabinowitch examined the urines of fifty hospital patients, selected at random, except that histories were carefully taken in order to exclude cases in which there was any suggestion of undue exposure to copper from treatment or occupation. The copper content of the urines ranged between traces and 0.41 mg. per liter and between traces and 0.7 mg. in twenty-four hours. The copper contents of the urine of three normal persons observed over a period of ten days corresponded to those noted in the entire group. In two copper "balance" experiments in which the subjects were fed copper, the amounts found were 0.63 and 0.81 mg. per liter and 0.84 and 1.01 mg. in twenty-four hours, respectively.

Journal of Immunology, Baltimore

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- Agglutination Experiments as Evidence of Diversity of Nonhemolytic Streptococci. H. W. Crowe, London, England.—p. 192.
- Investigation of Certain Synthetic Glucosides for Antigenic Properties. A. G. Wedum, Chicago.—p. 203.
- Selective Action of Crystal Violet and of Brilliant Green on Bacteriophages. A. Y. Wells and N. P. Sherwood, Lawrence, Kan.—p. 209.
- *Analysis of Loewenstein's Method for Isolating Tubercle Bacilli From Blood. M. L. Cohn, Denver.—p. 214.
- Actinobacillosis of Cattle in the United States. L. Thompson, Rochester, Minn.—p. 223.
- Blood Cultures in Chronic Arthritis. E. F. Traut, Chicago.—p. 230.
- Effects of Freezing on Spores and Toxins of Clostridium Botulinum. L. H. James, Washington, D. C.—p. 236.
- Hemoglobinophilic Bacilli from Infantile Meningitis. Bernice E. Eddy, Cincinnati.—p. 242.
- Effectiveness of Standard Diphtheria Antitoxin Against All Types of Diphtheria Infection. Olga R. Povitzky, Minnie Eisner and Erla Jackson, New York.—p. 246.
- *Pleomorphic Organism Showing Relationships Between Staphylococci and Actinomycetes. M. V. Novak and A. T. Henrich, Minneapolis.—p. 253.
- *Antibodies in Placental Extracts. C. F. McKhann and F. T. Chu, Boston.—p. 268.

Clostridium Botulinum in Frozen Fruits.—Wallace and Park's investigation was undertaken to determine whether or not botulism could occur through the agency of frozen foods. The data from their studies would indicate that, if foods are canned properly and used immediately after defrosting, there is little danger of botulism from frozen foods. Toxin is not readily destroyed by freezing, but there is little chance of toxin being present in properly prepared frozen foods. Toxin was not produced in these studies before freezing nor, with few exceptions, during freezing. It must be remembered that the inoculations used were massive compared with the natural inoculation encountered in food for canning, and while the few cases in which toxin was formed or liberated during freezing might seem important in this study, in the canning industry they probably would not be so considered because of this difference in inoculation. The spores of Clostridium botulinum are resistant to freezing and once in frozen food they probably remain there for long periods of time. This is not of great importance if foods are canned and frozen properly, and if they are consumed soon after thawing. If foods containing spores are allowed to thaw and stand at room temperature for several days before using, they may become dangerous. This is especially true of frozen vegetables.

Cataphoretic Velocity of Streptococci Isolated in Encephalitis.—Rosenow and Jensen state that the streptococci as isolated from the nasopharynx and other areas of infection, especially the apexes of pulpless teeth, and sometimes from the blood and involved organs of persons suffering from encephalitis and other diseases of the nervous system, possess a characteristic neurotropic cataphoretic velocity. The velocity of the streptococci as isolated in cases of encephalitis shifted toward the slow velocity of the streptococci from influenza during epidemic waves of influenza. The marked neurotropic type of velocity of the streptococci found during convalescence from influenza suggests, perhaps, why encephalitis and other diseases of the nervous system, such as epidemic hiccup, poli-encephalomyelitis, radiculitis and neuritis, are so prone to occur following attacks of influenza or epidemics of influenza. The serums of almost all patients having encephalitis and certain other diseases of the nervous system had specific velocity-slowness effects on the respective strains of streptococci isolated in cases of encephalitis and having neurotropic velocity. Cataphoretic measurements of the streptococci isolated from areas of infection and measurements of the specific slowing effect of

the serum of the patient have proved of value in the differential diagnosis in puzzling cases.

Isolating Tubercle Bacilli from Blood.—In conformity with earlier observations, Cohn found acetic acid toxic to human and bovine tubercle bacilli, while sulphuric acid is innocuous in the concentration previously recommended (an amount equal to 2 volumes of 6 per cent sulphuric acid for thirty minutes at 37 C.). An analysis of Loewenstein's method (acetic acid hemolysis and a medium containing asparagine, egg and potato flour) discloses that the medium is satisfactory for growing small numbers of tubercle bacilli but that its preparation is unnecessarily involved, as it contains a few unessential expensive materials, and that acetic acid is bacteriostatic to small numbers of tubercle bacilli, as determined by actual static tests and by practical tests with human and animal blood containing tubercle bacilli which were recoverable by another method (sulphuric acid treatment and inspissated glycerin water-egg yolk medium). Acetic acid as used by Loewenstein is innocuous to saprophytic acid-fast bacilli, and if these are present in the blood they may be recovered by this method but not by the sulphuric acid method.

Staphylococci and Actinomycetes.—Novak and Henrich recovered a yellow staphylococcus from triturated, Berkefeld-filtered cultures of an actinomycete after incubation for five weeks at room temperature. This organism was culturally and morphologically identical with staphylococci on ordinary routine mediums. On dextrose agar, rods and branching filaments developed from the coccoid forms. Filaments or rods reverted to cocci when transferred again to plain agar. Smooth and rough colonies were obtained from cultures of the yellow staphylococcus. Rod and coccoid forms appeared in both smooth and rough colonies. A G type culture (similar to the G forms of Hadley) was obtained from aged broth cultures of the organism. The elements in the G culture ranged in size from minute to normal. These G forms demonstrated no filamentous properties and were strictly bacterial in nature. The authors suggest that their observations support the theory that the staphylococci are related to the actinomycetes.

Antibodies in Placental Extracts.—McKhann and Chu made a number of different tests to determine the presence of immune bodies in the placental protein extracts. They observed that protein material obtained from human placentas by extraction with a 2 per cent solution of sodium chloride and refined by precipitation with ammonium sulphate contains substances, presumably antibodies, which (1) neutralize diphtheria toxin, (2) blanch scarlet fever rashes, (3) neutralize poliomyelitic virus, and (4) prevent measles in exposed, susceptible patients. In the course of hospitalization for other causes, fifteen children, nonimmune to measles, became thoroughly exposed to the disease, and in seven cases so closely exposed that infection would seem to have been a certainty. These children received placental protein extracts by intramuscular injection within five days after the exposure to measles. Fourteen of the patients who received the placental extracts escaped measles, while one child, after a period of incubation prolonged to nineteen days, had a mild, modified form of the disease. In contrast to these children who received placental extracts, three children, similarly exposed to measles, received, on the fourth day of exposure, 30 cc. each of adult whole blood by intramuscular injection; modified measles developed in all. Two children who through faulty histories were thought to have had measles and who received no serum contracted typical measles. The experience with these five children indicates the thoroughness of the exposure of the total group and justifies the conclusion that some, at least, of the children who received placental protein extract were protected.

Journal of Pharmacology & Exper. Therap., Baltimore

47: 377-496 (April) 1933

- Comparative Pharmacology of Some Condensation Products of Phenols with Aliphatic Aldehydes: Inquiry into Chemopharmacodynamic Relationships. D. I. Macht and W. C. Harden, Baltimore.—p. 377.
- Excretion of Morphine by Normal and Tolerant Dogs. W. A. Wolff, Cecilia Riegel and Edith G. Fry, Philadelphia.—p. 391.
- Action of Morphine on Mammalian Circulation. C. F. Schmidt and A. E. Livingston, Philadelphia.—p. 411.
- Relation of Dosage to Development of Tolerance to Morphine in Dogs. C. F. Schmidt and A. E. Livingston, Philadelphia.—p. 443.
- Note Concerning Actions of Pseudomorphine. C. F. Schmidt and A. E. Livingston, Philadelphia.—p. 473.

Journal of Nervous and Mental Disease, New York

77: 345-456 (April) 1933

- Effect of Ephedrine on Blood Sugar Mobilization in Chronic Encephalitis: Reversal of Ephedrine Action in Untreated Subjects and Effect of Treatment with Atropine or Hyoscine on Ephedrine Glycemic Reaction. I. Finkelman, Elgin, Ill.—p. 345.
- *Relation of Jugular Foramina to Epileptic Seizures and Hydrocephalus. D. B. Davis, Grand Rapids, Mich.—p. 351.
- Congenital Ependymal Cyst of Fourth Ventricle: Report of Case and Résumé of Symptomatology and Pathology of Tumors in This Location. T. S. Hill, Ann Arbor, Mich.—p. 358.
- Tumor of Parietal Lobe Showing Jacksonian Sensory Seizures Involving Tongue, Face, Thumb and Index Fingers, with Advanced Premature Atrophy of Affected Parts. A. Silverstein, Philadelphia.—p. 371.
- Dr. Bancroft and Psychiatry. S. E. Jelliffe, New York.—p. 385.

Relation of Jugular Foramina to Epilepsy.—Davis used the following technic in a series of roentgen examinations of the jugular foramina: The patient is placed in the supine position on a table, with the shoulders at the extreme head end, so that the head and neck extend beyond the end of the table. A Potter-Bucky diaphragm is placed at the head of the table so that its superior surface is 3 inches lower than the table on which the patient is lying. The patient's head is then tipped back until the top of his head, in the region of the lambda, rests on the Potter-Bucky diaphragm. The projection is correct when the angles of the jaws are in the plane which is determined by the focal spot of the x-ray tube, the left external auditory meatus and the right external auditory meatus. Care should be taken that the line between the focal spot and the center of the film is exactly in the midsagittal plane of the skull; then a restraining band is placed across the mandible. The roentgenograms are always made stereoscopically, by shifting the tube $1\frac{1}{2}$ inches in each direction, in the midsagittal plane. Stereoscopic shifts from side to side are not as satisfactory as those made longitudinally. Using a 40-inch target-film distance, an exposure of 300 milliamperes seconds may be used, varying in kilovoltage according to the thickness of the patient's head, or a standard setting of 100 kilovolts and 15 milliamperes may be selected, with a variation of the time from five to forty seconds, according to the thickness of the patient's head. The author made studies of forty patients with epileptic convulsions, twenty-nine of whom had foramina which were larger on the right, and eleven on the left. Ten patients presenting varied diagnoses were studied, and nine were found to have the larger foramen on the right and one on the left. The combined areas of the two foramina in ten patients of the convulsive group were found to be less in seven instances than the group presenting varied diagnoses. The author made roentgenograms of seven cases of hydrocephalus, in six of which the foramina were too minute to permit accurate measurement.

Missouri State Medical Assn. Journal, St. Louis

30: 139-184 (April) 1933

- Observations on Transurethral Prostatotomy. C. Greenberg, St. Joseph.—p. 139.
- Hepatitis with Late Dissemination. W. P. Glennon and R. V. Byrne, St. Louis.—p. 142.
- Types of Onset in Pulmonary Tuberculosis. E. E. Glenn, Mount Vernon.—p. 145.
- Pyogenic Infections of Terminal Phalanx, with Special Emphasis on Prophylaxis and Treatment. J. G. Probst, St. Louis.—p. 149.
- Polydactylia. G. Gellhorn, St. Louis.—p. 152.
- Care of Breast During Pregnancy and Puerperium. F. Emmert, St. Louis.—p. 155.
- Sancness in Maintaining Physical Efficiency. G. A. Skinner, Omaha.—p. 158.
- Indefensible Use of Morphine by Medical Profession. G. W. Robinson, Jr., and P. A. Johnson, Kansas City.—p. 161.
- Conservatism in Tonsillectomy. J. Zahorsky, St. Louis.—p. 164.
- *Differentiation of True Diabetes and Pseudodiabetes. B. Y. Glassberg, St. Louis.—p. 165.
- Separation of Old Uterine Scar After Multiple Cesarean Sections. A. Van Ravenswaay, Boonville.—p. 167.

Differentiation of True Diabetes and Pseudodiabetes.—Glassberg offers a modification of the long used dextrose tolerance test as a means of differentiating true diabetes and pseudodiabetes. After a fourteen hour fast he makes the patient lie down for an hour's rest, at the beginning of which the bladder is emptied and the urine discarded and the patient is given two glasses of water to drink. After the patient has rested for fifty-five minutes, fasting blood and urine samples are taken for sugar determination. (Only when the fasting true blood sugar is above 175 mg. per hundred cubic centimeters is a diagnosis of diabetes mellitus made and the test omitted.) At

the end of the hour's rest the patient should take 100 Gm. of dextrose dissolved in two glasses of water flavored with the juice of one lemon. One hour later, blood and urine samples are taken for sugar determination and the patient is again given two glasses of water. Two hours after this, blood and urine samples are again taken for sugar determination. The author bases his classification on the following data, after the ingestion of 100 Gm. of dextrose: In adequate insulin secretion, prompt secretion, low normal, will show 80 mg. of sugar in 100 cc. of fasting blood, 95 mg. after one hour, and 70 mg. after three hours; fairly prompt secretion, medium normal, will show 80 mg. of sugar in 100 cc. of fasting blood, 150 mg. after one hour, and 80 mg. after three hours; delayed secretion, high normal, will show 80 mg. of sugar in 100 cc. of fasting blood, 270 mg. after one hour, and 120 mg. after three hours. Potential diabetic patients (usually obese persons must be treated for obesity and as diabetic patients) will show 135 mg. of sugar in 100 cc. of fasting blood, 270 mg. after one hour, and from 60 to 120 mg. after three hours. Inadequate insulin secretion in typical diabetic patients will show from 80 to 200 mg. of sugar in 100 cc. of fasting blood, from 230 to 390 mg. after one hour, and from 250 to 470 mg. after three hours. Glycosuria may occur at any of the foregoing blood sugar levels, but by itself it has no significance.

New York State Journal of Medicine, New York

33: 493-556 (April 15) 1933

- The Medical Society of the State of New York: Our Responsibilities and Our Obligations. C. G. Heyd, New York.—p. 493.
- Control of Medical Activities by the Medical Profession. F. H. Flaherty, Syracuse.—p. 497.
- Costs of Medical Care: The Report of the Special Committee Appointed by the Medical Society of the State of New York to Consider the Final Report of the National Committee on the Costs of Medical Care Which Was Issued on Nov. 29, 1932.—p. 499.
- Financing Sickness. F. E. Elliott, Brooklyn.—p. 504.
- Maxillary Sinusitis: Pathology. A. A. Eggston, New York.—p. 508.
- Id.: Symptomatology. J. F. Fairbairn, Buffalo.—p. 515.
- Diagnosis of Maxillary Sinusitis. M. F. Jones, New York.—p. 517.
- Maxillary Sinusitis: Treatment. F. M. Sulzman, Troy.—p. 519.
- *Value of Immune Adult Blood in Treatment of Measles. A. D. Kaiser, Rochester.—p. 521.
- *Conductive Anesthesia for Electrosurgical Removal of Tonsils. E. R. Maillard, New York.—p. 527.

Immune Blood for Measles.—On the basis of a study of 214 children exposed to measles, 162 of whom were definitely exposed, Kaiser concludes that during a measles epidemic immune adult whole blood may be effectively used to assure that the patient will have an attenuated attack which confers a permanent immunity. He observed that the use of 10 cc. of whole blood has been sufficient to modify an attack of measles and materially reduce the incidence of complications. The use of 10 cc. of immune whole blood will not completely protect children who have been definitely exposed to measles. Much larger amounts are necessary for complete protection. The use of immune whole blood, usually parental, is simple, safe, inexpensive and effective in the treatment of measles.

Anesthesia for Electrosurgical Removal of Tonsils.—Maillard noted that an injection of a 2 per cent solution of procaine with epinephrine (1:2,500), made in the region of the superior fossa of the tonsils and infiltrating behind the capsule to a depth of about 1 inch, caused complete anesthesia of the tonsil, soft palate and base of the tongue within from five to ten minutes on the injected side. The loss of sensation in these regions is apparently due to an infiltration of the branches of the glossopharyngeal nerve that supply this area. It was possible to repeat this condition at each weekly visit on the same patient for a series of treatments. The author has given approximately fifty injections and has obtained the desired anesthesia in all instances. The postoperative results have been the same as with the use of the various topical anesthetics. The first indication of anesthesia is usually the presence of a nasal intonation of the patient's speech. One of the reactions noted in patients has been the regurgitation of liquid through the nasal orifices when attempting to drink water. This may be attributed to a disturbance of the normal reflex of swallowing, caused by the loss of sensation. There were also a few instances of increased lacrimation and a feeling of warmth on the anesthetized side of the face owing to involvement of the sympathetic nerve fibers. All these reactions were of short duration and not alarming in character.

Philippine Journal of Science, Manila

50: 211-344 (March) 1933. Partial Index

Solar Ultraviolet Radiometry: II. Instruments and Methods. W. D. Fleming, Manila.—p. 279.

Radiology, St. Paul

20: 241-330 (April) 1933

Osseous Development as an Index of Metabolism. E. K. Shelton, Santa Barbara, Calif.—p. 241.

Biologic Effects of Very High Frequency Electromagnetic Radiation. J. W. Schereschewsky, Boston.—p. 246.

Hernia of Lung: Roentgen Observations, with Report of Traumatic Case. H. A. Olin, Chicago.—p. 253.

Terminal Ileum, Cecum and Ascending Colon from Standpoint of Roentgenologist. Cassie Belle Rose, Chicago.—p. 266.

Bilateral Diaphragmatic Hernia. E. A. May, Newark, N. J.—p. 275.

Significance of Radiologic Findings in Low Back Pain: Review of Five Hundred Cases. W. Duncan, Cleveland.—p. 282.

Quality Determination of Roentgen Rays: Half Value Layer as Practical Method of Estimating Quality of Roentgen Rays. W. H. Meyer, New York.—p. 286.

Roentgen Ray as an Aid in Treatment of Gas Gangrene: Bacillus Welchii Infection: Preliminary Report. J. F. Kelly, Omaha.—p. 296.

Radium in Medical Use in the United States. R. R. Sayers, Washington, D. C.—p. 305.

Indications for Irradiation in Intra-Uterine Bleeding. J. H. Vaughan, Amarillo, Texas.—p. 310.

Radiologic Observations in Low Back Pain.—Duncan reviews the records of 500 consecutive patients with the predominating complaint of distress of one or another type in the lower part of the back. About 170 were women who showed a more marked hollowing of the lower back than normal, free movement in all directions, with the production of typical discomfort on hyperextension of the spine, and tenderness on pressure over the lumbosacral joints and the lower lumbar spinous processes. In two thirds of these patients the roentgenograms were reported as negative, while the other third showed either a sacralization of the fifth or sixth lumbar transverse process, mild arthritic changes, or a slight scoliosis to one or the other side. In no case did the roentgen observations materially influence the treatment instituted, but they substantiated the indications for it. In this type of case, nothing supplants the regimen of adequate rest, the avoidance of fatigue, the elimination of focal infection, the adoption of a sane dietetic routine, the application of local heat, massage, instruction in muscle reeducation, with the correction of mechanical defects, and, in a fairly high proportion of cases, the adoption of a brace or corset. Of the 500 patients, 230 were typified by the short, thickset man who has done heavy work and who from his early thirties may have been subject to recurrent attacks of lumbago, with periods of perfect freedom between attacks. In 158 of these 230 cases there were changes demonstrated radiologically which would have been anticipated from the clinical examination. Many of these patients had an early arthritic process without any radiologic evidence of it. In this group there is a distinct discrepancy between the clinical impression and the radiologic observations in many instances. In the seventy-two cases in which the roentgen observations were reported as normal, it is apparent that, without adequate data obtained from the history and physical examination, the difficulty of the therapeutic problem becomes much greater. In this group the presence of radiologic changes facilitates solution of the problem, but the absence of gross changes does not demonstrate that the disease is not present in these patients with arthritic symptoms. The author concludes that there exists a sufficiently large element of error in the diagnosis of low back pain, regardless of the thoroughness and comprehensiveness of the clinical investigation, to make roentgenographic examination of the area obligatory in order that there may be some degree of certainty as to the fundamental factors involved in the production of the disability.

Southwestern Medicine, Phoenix, Ariz.

17: 111-144 (April) 1933

Tuberculosis Survey of New Mexico. K. Emerson, New York.—p. 111.

Diagnosis and Management of Diseases of Biliary Tract. E. J. Cummins, El Paso, Texas.—p. 113.

Observations on Transurethral Prostatic Resections. K. D. Lynch, El Paso, Texas.—p. 116.

Trichomonas Infection. H. M. Purcell, Phoenix, Ariz.—p. 122.

Renal and Ureteral Calculus. D. M. Davis, Phoenix, Ariz.—p. 124.

Diseases Among the Indians. J. C. Hancock, San Carlos, Ariz.—p. 126.

Epidemic of Mumps. S. J. Tillim, Chin Lee, Ariz.—p. 129.

Virginia Medical Monthly, Richmond

59: 573-636 (Jan.) 1933

Most Generally Prevalent, Most Inadequately Treated, Controllable Chronic Disease. R. B. Osgood, Boston.—p. 573.

Utility and Dangers of Obstetric Forceps. S. A. Cosgrove, Jersey City, N. J.—p. 580.

Management of Chronic Catarrhal Otitis Media. J. F. Culp, Harrisburg, Pa.—p. 584.

Medical Service in Jails and Prison Camps in Virginia. R. K. Flannagan, Richmond.—p. 589.

Need for Research in Mental Hygiene. D. C. Wilson, University.—p. 591.

The General Practitioner in Relation to Mental Hygiene. I. C. Harrison, Danville.—p. 592.

Staphylococcal Infections of Kidney, with Especial Reference to Kidney Carbuncle. L. Brady, Baltimore.—p. 594.

Detachment of Retina: Differential Diagnosis. J. N. Greear, Jr., Washington, D. C.—p. 604.

Physician's Part in Diphtheria Control. V. L. Ellicott, Rockville, Md.—p. 606.

Removal of Wens: Simple Technic. J. B. H. Waring, Cincinnati.—p. 607.

Tuberculous Meningitis in Children: Review of Thirty-Three Proved Cases. T. A. Gibson, Winchester.—p. 608.

Genito-Urinary Tract and Rectal Problems as Part of Gynecology. G. F. Douglas, Birmingham, Ala.—p. 611.

60: 1-66 (April) 1933

Outline of a Personality Study for Office Use. D. C. Wilson, University.—p. 1.

Partial Resection of Stomach for Ulcer. G. P. LaRoque, Richmond.—p. 4.

Postoperative Tetany. J. M. Emmett, Clifton Forge.—p. 7.

Primary Tuberculosis of Tonsils: Report of Case. Complicated by Extension to Pharynx and Soft Palate. H. G. Preston, Harrisonburg.—p. 10.

*Can Intestinal Adhesions Be Delayed? S. Leigh, Norfolk.—p. 18.

Origin and Significance of Certain Forms of Behavior. J. K. Hall, Richmond.—p. 19.

Acute Appendicitis as Observed by Country Doctor. J. N. Clore, Madison.—p. 27.

Recent Advances in Treatment of Burns. H. J. Warthen, Jr., Richmond.—p. 30.

*Treatment of Acute Arsenic Poisoning. W. R. Bond, Richmond.—p. 36.

Blood Transfusion. H. M. Doles, Norfolk.—p. 39.

Ludwig's Angina. R. M. Dehart, Floyd.—p. 45.

Three Sins Against Children: Purgation, Dehydration and Starvation. T. D. Walker, Jr., Newport News.—p. 47.

Intestinal Adhesions.—Leigh believes that, in cases of appendicitis, adhesions can be delayed and that proper drainage materials will drain just as long as necessary, provided real drains are used, the patient is properly elevated, the side position is arranged, and fluids are administered in as large amounts as the patient will stand. Tubes must be large, soft, thick walled and noncompressible. They should extend down into the pelvis and in other directions if indicated. They should be brought out at the outer (right) end of a transverse incision, the bed should be elevated sufficiently high, and the patient placed far enough on the right side to make the outer ends of the tubes their lowest point. Fluids will gravitate readily down to the tubes and run out into the dressings. Wicks of gauze placed lightly in the tubes will facilitate the drainage. As much salt solution as the rectum will absorb should be administered by the rectal drip with a visible dropper. In addition, saline solution may be given subcutaneously and intravenously as indicated. The patient should receive nothing by mouth except water until the stomach will tolerate food, and he should be nourished by intravenous dextrose, though usually simple fluids may be administered on the second or third day. The author concludes that the delaying of adhesions is important in many other than appendix cases, such as gunshot wounds of the abdomen, drainage following ruptured duodenal ulcer, and other infected abdominal conditions.

Treatment of Acute Arsenic Poisoning.—Bond induced arsenic poisoning in apparently healthy dogs, following a twenty-four hour period of starvation. As a source of arsenic he employed solution of potassium arsenite, which he administered from a pipet into a funnel connected with a stomach tube and rinsed down with 25 cc. of tap water. The mortality of a series of thirteen dogs given 0.5 cc. of the solution per kilogram of body weight was 46.1 per cent, and that of twenty-four dogs given 0.75 per kilogram of body weight was 100 per cent. In all animals treated with sodium hydrosulphite, from 0.75 to 1 cc. per kilogram doses of solution of potassium arsenite were employed. The antidote, 100 mg. per kilogram in a 10 per cent solution, was given immediately afterward and rinsed down

with 25 cc. of normal solution of hydrochloric acid. The results indicate that the compound possesses definite value if administered immediately following the oral administration of a fatal dose of potassium arsenite. The author determined that in a fatal dose of arsenic the antidote was ineffective after the lapse of fifteen minutes. While it is often difficult to secure experimental evidence to justify certain conclusions, he believes that sodium hydrosulphite possesses a definite beneficial action in preventing the serious intoxication resulting from sublethal doses of potassium arsenite, and that the time interval of effective treatment would be considerably prolonged with weaker concentrations of arsenic and by the presence of food in the stomach. The antidote itself is of low toxicity. Dogs recover from the oral administration of 1 Gm. per kilogram of body weight. Gross and histologic studies on animals that have received large doses of sodium hydrosulphite reveal no pathologic changes.

West Virginia Medical Journal, Charleston

29: 145-192 (April) 1933

- Sinus Disease in Children. V. W. Fischbach, Cincinnati.—p. 145.
*Excretory Urography. B. H. Nichols, Cleveland.—p. 152.
Sudden Heart Death. W. T. McClure, Wheeling.—p. 157.
Eye, Ear, Nose and Throat Pathology in Children. A. P. Hudgins, Hinton.—p. 160.
*Diagnosis and Treatment of Some Common Heart Conditions. S. L. Cherry, Clarksburg.—p. 164.
The Tonsil Problem. A. K. Hoge, Wheeling.—p. 170.
*Migraine: New Therapeutic Approach. E. Podolsky, Brooklyn.—p. 173.
The Physician and the West Virginia White House Conference. G. M. Lyon, Huntington.—p. 175.
Some Phases of Contract Practice: Outline of Some Important Questions Which Deserve Immediate Consideration. R. G. Leland, Chicago.—p. 180.

Excretory Urography.—Nichols states that excretory urography is a valuable adjunct to other diagnostic procedures and is almost universally applicable. This method determines the functional as well as the anatomic condition of the urinary tract. No artificial means should be used to accentuate the shadows, as this precludes the advantages of this method. No greater concentration of the iodine than 5 or 6 per cent will be excreted by the kidney with a normal excretion threshold. The technic of application is comparable to and apparently may be done with no greater difficulty or danger than is encountered in the practice of intravenous cholecystography. An entirely new understanding of some phases of kidney dynamics is illustrated by intravenous urography. For instance, the normally functioning kidney pelvis is almost completely filled instead of empty as was believed formerly. There is a systolic and diastolic rhythm in the pelvis of the kidney. The true shape and position of the ureter can be observed without distortion, and also its peristalsis with alternate narrowing and distention, thus giving a definite identity to the ureteral stricture. The observations of intravenous urography are most valuable in the presence of hydronephrosis and of calculi. This method is not well suited to the study of infectious processes in the kidney other than tuberculosis. Renal tuberculosis in its early stages is also difficult to diagnose by the intravenous pyelogram. The use of this method of urography eliminates the controversy as to whether or not bilateral pyelograms should be made, and also settles the question as to whether pyelography should be attempted in the presence of renal tuberculosis. The intravenous method does not yield sufficient information in most cases of renal tumor, particularly in the early stages. All information possibly obtainable must be used in the diagnosis of questionable cases, including history, urinary observations, cystoscopic examination, and especially the opinion of a competent urologist.

Diagnosis and Treatment of Common Heart Conditions.—Cherry points out that many of the common heart conditions are easily diagnosed and treated by ordinary clinical means, although graphic methods such as electrocardiograms may be helpful or necessary in doubtful cases. In the diagnosis of heart failure, clinical symptoms are much more important than physical signs or graphic methods. The earliest symptom of cardiac failure is dyspnea, and this should never be minimized but should lead to a careful study of the patient. Many cases of coronary infarctions have in the past been diagnosed as attacks of "acute indigestion," but there is no longer any reason for this mistake. When digitalis is given after the total amount necessary has been calculated and when the heart

rate is used as a guide of its maximum effect, there will be no risk of overdosage, and small amounts of digitalis can thereafter be used daily to maintain this effect.

Migraine.—Podolsky reports seven cases of migraine which he treated with ergotamine tartrate. He believes migraine to be initiated by some mental or physical stimulus, which may or may not have a pathologic background. If due to some disease condition, such as an inflamed gallbladder, the diseased organ should be removed. But migraine is an imbalance, and this imbalance must also be destroyed if complete success is to be attained. The migrainous syndrome depends for the most part on the overirritation of the cerebral arterioles. The most logical form of medication is that which aims to depress this overstimulation with its consequent spasm. Ergotamine tartrate seems to be capable of accomplishing this aim.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

56: 1-107 (March) 1933

- Dermalomes in Man. O. Foerster.—p. 1.
*Observations on Form and Nature of "Grasping" Movements and "Tonic Innervation" Seen in Certain Cases of Lesion of Frontal Lobe. F. M. R. Walshe and E. G. Robertson.—p. 40.
Rate of Conduction and Refractory Period of Human Sensory Neuron. F. Golla and S. Antonovitch.—p. 71.
Connections of Medial Cell Groups of Thalamus. W. E. L. Clark and R. H. Boggan.—p. 83.
Cortical Flexor Tone in Fore Limb of Cat: Observations on Hemiplegic Attitude in Man. D. M. Blair and R. J. S. McDowall.—p. 99.

"Grasping" Movements in Lesions of Frontal Lobe.—A study of eight patients presenting lesions of the frontal lobe has led Walshe and Robertson to the conclusion that phenomena included under the various headings of "tonic innervation," "the grasp reflex," "forced grasping and groping," and the like are found to be capable of analysis into two separable components, the one volitional and the other reflex. (1) The volitional component includes grasping movements of the fingers, with which movements of the hand and arm through space are sometimes associated. The stimuli to which they are responses are visual and tactile. Often both are operative, and it is only when the patient has the use of vision that movements of the limb as a whole occur. Tactile stimuli alone evoke nothing but grasping movements of the fingers, the hand and arm remaining still. (2) The reflex component consists in the tonic innervation of muscles when, and only when, these are subjected to the proprioceptive stimulus of stretch. Tactile or visual stimuli are not adequate to produce it. It may occur in the conscious or in the unconscious patient, and it is entirely outside the patient's control. The stimulus and the response are fixed and uniform and indicate that one is dealing with a true tonic reflex of the segmental nervous system, and one in which the cerebral cortex plays no part. Of the eight cases which form the basis of the authors' study, six are reported. In all there was evidence of the presence of a lesion involving the frontal lobe, and in all but one there were signs of an associated pyramidal lesion. In this one patient pyramidal signs never developed, and it is probable that grasping and tonic phenomena preceded the appearance of the signs in the others. When found, pyramidal signs are such as to indicate a relatively slight impairment of function in this system of neurons. Apraxia was not observed in any of the authors' patients. Not every one of their patients showed the full range of the grasping and tonic phenomena, and those who have done so have not shown it throughout the whole period of observation. These phenomena develop gradually, reach full development, and then with the progress of the illness they undergo a progressive restriction of range, accompanied by an increasing impairment of consciousness, until finally with the onset of stupor and semiconsciousness nothing remains but tonic innervation elicited by stretching the muscles involved. Under the conditions of a progressive dissolution of nervous function, this component has been the last to disappear. All the patients showed some unequivocal signs of impairment of psychic function—some signs of dissolution of function in the highest cerebral centers—and the authors believe this to be an invariable concomitant of grasping movements, and probably also of tonic innervation.

British Journal of Physical Medicine, London

7: 233-252 (April) 1933

- Technic and Dosage of Heliotherapy in Surgical Tuberculosis. A. Rollier.—p. 235.
 Treatment of Recent Injuries by Vigorous Physiotherapeutic Methods. W. E. Tucker.—p. 238.
 Influence of Pigmentation Due to Light Treatment on Eruption of Measles. R. Aitken.—p. 241.
 Physical Treatment of Various Rheumatic Affections of Shoulder. G. Kahlmeter.—p. 242.
 Electrical Measurement of Temperature. B. D. H. Watters.—p. 246.

British Medical Journal, London

1: 641-684 (April 15) 1933

- Hodgkin's Disease: Pathogenic Agent in the Glands, and Its Application in Diagnosis. M. H. Gordon.—p. 641.
 *Biologic Test in Diagnosis of Hodgkin's Disease. C. E. Van Rooyen.—p. 644.
 So-Called "Neurasthenia." A. F. Treadgold.—p. 647.
 Otitis Media Due to Pneumococcus Mucosus. I. Vitenson.—p. 651.
 Pseudocyst of the Pancreas. D. J. Harries.—p. 654.

Biologic Test in Hodgkin's Disease.—Van Rooyen subjected enlarged lymph nodes removed from five patients with Hodgkin's disease to the test devised by Gordon. He obtained three typical positive results, one doubtful result and one negative result. He noted that this lymphadenomatous tissue, when ground, suspended in broth, and kept at 4 C. for more than ten days, produces striking effects when introduced into the brains of rabbits. It was also evident that these effects appear to be specific in character, for it has been shown that similarly prepared suspensions of lymphoid tissue removed in cases that clinically resembled Hodgkin's disease yielded negative results on test. Such cases have included glandular tuberculosis, lymphosarcoma and leukemia, all of which may be regarded as the commonest forms of lymphatic enlargement that may simulate Hodgkin's disease in temperate climates. The author does not give a detailed account of his experiments, which have been directed toward ascertaining the precise nature of the agent responsible for paralysis, ataxia and muscular wasting in rabbits, but the results obtained indicate that the autolysis, disintegration and cellular destruction of lymphadenomatous tissue liberate a product that is capable of producing an encephalitic syndrome in rabbits and guinea-pigs. Neither the inoculum nor the brain of an animal that succumbs to the condition shows the presence of bacteria after lengthy periods of observation. The author believes that the changes produced in rabbits cannot be interpreted on the basis of nervous changes following the introduction of a simple nonspecific irritating substance into the brain. Thus it can be demonstrated that substances such as a streptococcus toxin, sodium nucleate, aleuronat, quinine, urethane or finely powdered glass, which are capable of producing inflammatory tissue reactions, may be introduced into the brain of a rabbit with impunity. Indeed, these irritants may even be introduced in combination into the same animal on repeated occasions without the least visible effect. The author suggests that lymph nodes removed at biopsy in suggestive cases of Hodgkin's disease should not only be examined histologically and bacteriologically but should also be subjected to Gordon's biologic test.

Journal of Anatomy, London

67: 355-490 (April) 1933

- Development in Vitro of Young Rabbit Embryos. C. H. Waddington and A. J. Waterman.—p. 355.
 Growth of Epiphyses of Long Bones in the Madder-Fed Pig. C. G. Payton.—p. 371.
 Observations on Venae Cavae of Certain Mammals. K. J. Franklin.—p. 382.
 Involution of Transitory Cortex of Mouse Suprarenal. R. Whitehead.—p. 387.
 Variations in Cortical Lipoid of Mouse Suprarenal with Sex and Age. R. Whitehead.—p. 393.
 Growth and Mitosis in Mouse Suprarenal. R. Whitehead.—p. 399.
 Classification of Upper Lip in Mammals. J. D. Boyd.—p. 409.
 Distribution of Vasoconstrictor Fibers in Limbs. E. D. Telford and J. S. B. Stopford.—p. 417.
 Note on Afferent Nerve Supply of Facial Muscles. C. P. G. Wakeley and F. H. Edgeworth.—p. 420.
 Report of Spinous Processes of Cervical Vertebrae in Series of Egyptian Skeletons. L. R. Shore.—p. 422.
 Anatomy of Head of Callorhynchus Antarcticus. H. L. Kesteven.—p. 443.
 Notes on Some Anomalous Gibbon Skulls. A. T. Hopwood.—p. 475.

Journal of State Medicine, London

41: 187-248 (April) 1933

- Some New Investigations Regarding Old Bacteriologic Problems: Lecture III. Bactericidal Effects of Silver. M. Neisser.—p. 189.
 Survey of Diphtheria in England and Wales. J. G. Forbes.—p. 202.
 Infection with Bacillus Tuberculosis in Europe and North America. B. R. Clarke.—p. 218.
 Eugenics in Relation to Maintenance of Health and Avoidance of Disease. C. P. Blacker.—p. 226.

Journal of Tropical Medicine and Hygiene, London

36: 81-96 (March 15) 1933

- Recent Discoveries in Virus Diseases of Tropical Climates. M. H. Finkelstein.—p. 81.
 Life History and Habits of British Mosquitoes in Relation to Their Control by Antilarval Operations. P. G. Shute.—p. 83.

Lancet, London

1: 733-784 (April 8) 1933

- *Blood Pressure in the Healthy Young Male Adult. H. A. Treadgold.—p. 733.
 Addison's Disease Occurring in Course of Pulmonary Carcinoma: Clinical Symptoms. F. J. Poynton, G. P. Wright and L. P. E. Laurent.—p. 740.
 High Carbohydrate Diets in Diabetes. J. Eason and D. M. Lyon.—p. 743.
 *Butyric Acid in Treatment of Cancer. J. Watson.—p. 746.

Blood Pressure in Male Adults.—On the basis of a study of more than 20,000 cases (male candidates for the Royal Air Force), Treadgold concludes that age, between 18 and 40, and proportionate height and weight have little effect on blood pressure. Abnormal body build is a pronounced factor, blood pressure varying from 118/75 in the lightest underweight group to 132/82 in the heaviest overweight group. Cardiovascular inefficiency, as judged by Royal Air Force tests and standards, accentuates these differences in body build. The emotional factor on first examination is of great importance. It affects mainly the systolic pressure. Although most marked in the unfit, it is comparatively common in fit candidates and its transitory nature is shown by following up such patients during their service. The height of the diastolic pressure is of great value in determining whether these cases are potential cases of raised blood pressure. The psychoneuroses seem to play little part in the causation of raised blood pressure in healthy young adults. Enlargement of the thyroid in these men is associated with a high percentage of cardiovascular inefficiency and, after allowing for this, both systolic and diastolic pressures are slightly above normal. Functional albuminuria has no effect on blood pressure, but glycosuria of the renal or lag type causes a slight rise of both systolic and diastolic pressures. Cases with a past history of scarlet fever show a slight rise in the diastolic pressure only, probably because of unsuspected renal involvement in a small percentage of such cases. Extremely hot climates tend to lower blood pressure, but moderately warm countries produce no effect. Hypotension, even when the systolic pressure is below 100, can be present in perfect health. The characteristics of the fit hypotensive person are a higher degree of cardiovascular efficiency than normal, and a tendency to underweight. It is rarely encountered on first examination owing to the emotional factor, but a diastolic pressure of 70 or below is always suggestive of its presence under normal conditions. Hypotension was present in 3 per cent of the fit pilots. Raised blood pressure, i. e., cases presenting systolic pressure of 140 and over, constituted 6 per cent of the fit pilots. Two per cent have blood pressure of 140/90 and over. Their characteristics were a tendency to overweight and poorer cardiovascular efficiency than normal. Blood pressure is higher on entry than in the normal fit candidate. Pulse pressure varies with the height of the systolic pressure, but relatively large pulse pressures with a low systolic pressure may coexist with perfect health. Small pulse pressures with normal systolic and high diastolic pressure are suggestive of a pathologic cause, and all cases of a persistent diastolic pressure over 90 require investigation irrespective of the height of the systolic pressure. The tendency to either hypotension or hypertension is probably a constitutional one, and such factors as obesity and toxemia, when they affect blood pressure, probably do so by emphasizing this constitutional tendency.

Butyric Acid in Treatment of Cancer.—Watson states that butyric acid has a destructive action on cancer of many

parts of the body, while it has a much less injurious effect on normal tissues; i. e., it is markedly selective. It is useful in cleaning up fungating malignant ulcers and rendering them suitable for treatment by surgery or radium. It can be made to destroy and delay the spread of growths in inoperable cancer of the rectum and stomach, and it destroys superficial papillomas. While the author used butyrate of quinine he was able as a rule to get the cervix cleared but was conscious of the limitations in its power of destruction. Since he has used a mixture of butyric acid and diatomaceous earth, cases of moderate severity have been rapidly prepared for Wertheim's method and the results have been good, without any trouble from pelvic sepsis. The author used a mixture of diatomaceous earth powder and butyric acid (from 40 to 50 per cent) in gelatin capsules. In treating cancer of the uterus the cervix is first curetted to remove as much as possible of the fungating mass. Care must be taken to avoid damage to the bladder and rectum, for the last vestiges of diseased tissue can be removed more safely by the chemical than by the mechanical agent. The cavity is then packed with gelatin capsules filled with the 50 per cent mixture of butyric acid and diatomaceous earth and the vagina is closed by the insertion of a plug of gauze or absorbent cotton. A small quantity of chalk may be placed in the upper part of the plug to neutralize any acid in the discharge. The 50 per cent mixture does little or no harm to the normal tissue and is just strong enough to break down the trabeculae, which are partially involved in the disease, and so opens up the pockets which might otherwise interfere with the complete destruction of the diseased tissues. The author's experience has been that, soon in the course of treatment, the patient is relieved of pain and improves in general well being.

Medical Journal of Australia, Sydney

1: 331-358 (March 18) 1933

The Anemias. W. Evans.—p. 331.

*Infection of Placenta and of Fetus by Induction of Labor in Eclampsia. W. J. Penfold and Hildred M. Butler.—p. 336.

Plumbing. H. C. R. Darling.—p. 341.

Nasal Sinusitis in Relation to Pulmonary Tuberculosis. C. M. Eadie.—p. 345.

Infection of Placenta and Fetus in Eclampsia.—Penfold and Butler examined twenty-five placentas, seventeen in cases of antepartum eclampsia, seven from intrapartum and one from a postpartum case. They were unable to isolate from these placentas any organism that appeared to them to be etiologically related to eclampsia. Coliform organisms were frequently found in the placentas of a series of women suffering from eclampsia. The presence of these organisms was closely correlated with the induction of labor. Their presence was likewise closely associated with a high fetal or neonatal mortality, but the authors have no positive evidence from their series that this mortality was caused by the placental infections. The frequency with which coliform infections of the new-born occur, described in the literature, has probably been largely due to infection of the fetus from the contaminated placenta.

1: 359-390 (March 25) 1933

*Syphilis in Children. G. Norrie.—p. 359.

Gastro-Enteritis. L. Male.—p. 364.

Enlargement of Lymphatic Glands in Children. P. L. Hipsley.—p. 368.

Syphilis in Children.—Norrie states that, in order to prevent syphilis in children, both parents should be treated and that the mother should be treated while pregnant, but, failing that, everything depends on the early diagnosis and adequate treatment of the child. Vigorous treatment should be instituted immediately after the diagnosis is made, because children respond more rapidly to treatment. A combined course of arsenic and bismuth compounds has been found to be most effective and is given by means of injections once a week. In urgent cases, the arsenical preparation is given intravenously into a scalp vein or the external jugular vein, and in the older child into a vein of the arm. In cases in which it is difficult to give drugs intravenously, the arsenic preparation may be given intramuscularly in the gluteal region. The bismuth preparation is injected intramuscularly. A course of six doses of neoarsphenamine followed by eight doses of a bismuth preparation may be given as a routine. A small amount of each drug may be given for the first dose, for example, for a baby of a few

weeks, 0.075 Gm. of neoarsphenamine may be given intravenously, followed by five doses of 0.15 Gm. each; then 0.5 cc. of an oily preparation of bismuth followed by seven doses of 1 cc. each. The doses may be increased with the age of patients up to 0.45 Gm. of neoarsphenamine and as much as 4 cc. of the bismuth preparation. In the author's patients, few ill effects were seen. No jaundice or dermatitis occurred from the arsenical preparation, but in some cases there was rarely marked vomiting and diarrhea. An interval of one month was allowed after a course of treatment, during which time potassium iodide was given to the older patients. At the end of the rest period, a Wassermann test is done and two full courses of treatment are given after the Wassermann reaction first fails to occur and, if the serum continues to give no reaction, no further injections are given. For the ensuing year, mercury is given orally for two-monthly periods in the form of mercury and chalk, from 0.01 to 0.32 Gm. three times a day, followed by intervals of two months in which no treatment is given. The child is kept under observation for another year, during which time no treatment is given. Wassermann tests are done every six months during this time, and if at the end of this period the tests have yielded no reaction, the child is considered cured.

Chinese Medical Journal, Shanghai

47: 111-222 (Feb.) 1933

Tuberculosis in Kwangtung: According to Age, Sex, Occupation and Economic Condition. F. Oldt.—p. 111.

Tuberculosis Problem in China. G. F. Bume.—p. 128.

Composite Tumors of Salivary Glands: Clinicopathologic Study of Forty-Five Cases. H. I. Chen and H. H. Loucks.—p. 138.

Practical Value of O Agglutination in Widal Test. D. H. Wong and S. H. Zia.—p. 154.

*Occurrence of Late Lactose Fermenting Coliform Bacilli in Dysentery. F. F. Tang.—p. 161.

Household Mosquitoes and Human Filariasis in Amoy, South China. L. C. Feng.—p. 168.

Chinese Female Pelvis: Study in Pelvic Measurements of Two Thousand Two Hundred and Sixty Chinese Women, with Suggestions as to the Probable Normals. Eula Eno.—p. 179.

Lactose Fermenting Coliform Bacilli in Dysentery.—Tang isolated seven strains of late lactose fermenting and one strain of non-lactose fermenting coliform bacilli from eight cases of mild dysentery. The earliest fermentation of lactose was seen on the fourth day and the latest on the fourteenth day. When peptone water was used as the medium for fermentation, the action was further delayed. The late lactose fermenters were classified as members of the genus *Escherichia* or the so-called colon lactic group and the non-lactose fermenter as a member of the genus of the aerobacter or the aerogenes group according to the Voges-Proskauer reaction and methyl red and other cultural tests. These organisms were distinct from *Sonne's bacillus* both culturally and serologically. The author discusses their relation to dysentery.

Journal d'Urologie Médicale et Chirurgicale, Paris

35: 377-472 (May) 1933

*Late Results of Treatment of Epididymal Tuberculosis. M. de Langre.—p. 377.

Action of Massive Ureteral Irrigation by Janet's Method: Experiences in Acute Case of Blennorrhagic Epididymitis. G. S. Epstein.—p. 403.

Epididymal Tuberculosis.—De Langre studied the late results of treatment of epididymal tuberculosis in sixty-two cases in Legueu's clinic. The patients were treated by epididymectomy or castration. Twenty-seven were cured or improved, while twenty had genital sequelae, three had urinary sequelae and eleven died from renal or pulmonary tuberculosis, tuberculous meningitis or unknown causes. These poor results are due to the fact that epididymal tuberculosis is usually associated with other tuberculous lesions. These may be pulmonary or renal, bilateral epididymal or vesiculoprosthetic lesions. The habitual coexistence of the latter (80 per cent) is the chief cause of the unfavorable prognosis of treatment of epididymal tuberculosis. These lesions usually remain latent but are the point of departure for infection of the other side or of any other organ. A statistical study of the results of various forms of treatment shows that epididymectomy is the best method. This is corroborated by a pathogenic study which shows that epididymitis is usually secondary. In case of a lesion limited to the tail of the epididymis, medical treatment may be tried before resort-

ing to epididymectomy. If the whole epididymis is invaded, epididymectomy is absolutely indicated even if the lesions are extensive, as the testis is often healthy. A small lesion of the testis near the epididymis may be extirpated in conjunction with the epididymectomy. Castration should be reserved for wide invasion of the testis. In case of bilateral lesions, double epididymectomy should be done to protect both testes. In case of advanced lesions, epididymectomy performed on the less affected side will permit castration on the other. Castration should never be bilateral, because of the important internal function of the testes. Surgical intervention must be followed by medical therapy to avoid recurrences and infection of other organs. Periodic examinations of the urine to discover latent renal tuberculosis and periodic examinations of the patient to permit immediate treatment of infections of the other side are recommended.

Presse Médicale, Paris

41: 985-1008 (June 21) 1933

- Traumatic Spondylitis with Extensive Osteoporosis of Spine in a Tabetic Patient. André-Thomas, H. Schaeffer and Huc.—p. 985.
Postoperative Hyperazotemia with Dechloruration Cured by Rechloruration: Case. H. Chahaniér, C. Lohé-Onell and E. Létu.—p. 987.
Chronic Nontuberculous Arthritis of Articulations of Sacrum. R. Massart.—p. 990.
Modifications of Arterial Pressure After Injection of Substances Extracted from Urine of Normal Subjects and Hypertensive Patients. E. Dicker.—p. 992.
*Juxta-Articular Nodosities and Their Relation to Syphilis. R. Burnier.—p. 995.

Juxta-Articular Nodosities and Their Relation to Syphilis.—Burnier discusses under the name of juxta-articular nodosities a form of subcutaneous nodules that occur in the vicinity of bones, chiefly around articulations, the olecranon being the site of predilection. They are round or oval and are usually firm and mobile under the skin, but they may soften and ulcerate, leaving a scar. The average number is from two to four, although fifty have been observed. Their development is chronic and they are usually painless. Microscopically they appear to consist of fibrous tissue, partly degenerated. They occur in men and women, most frequently between the ages of 30 and 50. Their incidence is not limited to the tropics, as was formerly believed, but they have been found in all countries. The etiology of these nodules has been much discussed. In tropical countries they seem to have a multiple origin, mycosis, filariasis or frambesia being most frequently involved. In nontropical countries a syphilitic origin is most common. In 98 per cent of nontropical cases of extra-articular nodosity the Wassermann reaction was positive. The nodosities frequently occur together with symptoms of tertiary syphilis, more rarely with symptoms of secondary syphilis and never with a chancre. If a nodule is found in a patient who has never been to the tropics, a test for syphilis should be performed immediately, as it is usually a fibrous or fibroid syphiloma which will probably disappear with antisyphilitic treatment, especially if it is of recent origin.

Revue de Chirurgie, Paris

52: 401-478 (June) 1933

- *Method of Cranioplasty: Repair of Cranial Wall by Grafts, Thin Osseous Layers Sawed from Internal Cortex of Tibia. E. Juvara.—p. 401.
Therapy of General Streptococcal Infection. H. Germain.—p. 423.
Spinal Anesthesia with Nupercaine. L. Lambert.—p. 459.

Method of Cranioplasty.—For the reconstitution of cranial defects by autografts, Juvara employs wide, long, thin osseous lamina, sawed off from the interior cortex of the tibia parallel to the cutaneous surface of the bone. The first part of the operation consists in preparing the cranial opening. The soft parts are incised at the site of the old scar, care being taken to keep the dura intact. The periosteum is incised, detached and pushed back a centimeter on the side of the short edges of the gap. The edges are freshened with a chisel, the short edges being given a beveled surface. To obtain the bone graft, an incision is made over the middle of the interior face of the right tibia. The aponeuroses along the edges of the bone are incised and the muscular insertions along the lower edge are detached a little. The length of the desired graft is marked on the periosteum. Starting at the upper mark with a Farabeuf saw, the blade of which is inserted at a right angle, a layer of bone from 1.5 to 2 mm. thick and of the desired

length is removed from the surface of the tibia. This thin layer of bone is covered with periosteum on one side; the other side is slightly striated from the action of the saw. This side, which is to come in contact with the dura, is polished with a file and the ends are slightly beveled to fit the beveled short edges of the cranial gap. The osseous plate is then curved by squeezing between the jaws of special pressure forceps designed by the author to be adapted exactly to the convexity of the brain. The graft is then put in place, with the extremities on the beveled edges of the cranial opening. The detached periosteal flaps are placed over the graft and sutured with fine catgut to the periosteum of the graft, the skin is sutured and a slightly compressive bandage is applied. The technic described is employed in case of a cranial opening that has the width of the anterior face of the tibia. If the opening is narrower, the graft must be cut down with cutting pliers after its removal or with a chisel before its removal. If the cranial gap is wider than the tibia, two strips of bone are detached from the tibia and grafted into the opening with their edges together. In the rare event of an opening more than twice the width of the tibia, the grafts may be spaced a small distance apart, or three strips of bone may be employed.

Policlinico, Rome

40: 297-356 (June 15) 1933. Surgical Section

- Anaphylaxis and Ulcer of Stomach. G. B. Culmone.—p. 297.
Research on Anastomosis of Splenic Artery with Hepatic Artery. V. Ghiron and L. Badalla.—p. 308.
*Importance of Enterococci in Genesis of Phlegmonous Adenitis of Neck. P. Marri.—p. 320.
Congenital Dilatation of Choledochus. L. Ugelli.—p. 343.

Enterococci in Phlegmonous Adenitis of Neck.—Marri states that common agents of phlegmonous adenitis are micro-organisms with morphologic, biologic and cultural characteristics that classify them as enterococci. He treated sixteen patients; by intravenous injection in rabbits he isolated the hemolytic and extremely virulent *Staphylococcus pyogenes-aureus* from the pus of three patients and, in the remaining, he found in pure culture micro-organisms of weak pathogenic power, which he relegated to the group of enterococci. In culture, enterococci differ from micro-organisms of a related group (*Streptococci-pneumococci*) in that they are more variable in form, size and disposition. They have considerable vitality, which generally causes them to be mistaken for hemolytic or nonhemolytic, common, pus-forming streptococci, especially in cultures containing bile. They sometimes develop at outside temperature on ordinary mediums without deriving any advantages from mediums of special composition. On blood-agar their employment varies frequently, their hemolytic properties are negative or intermittently positive and the aspect of brown or slate-gray or greenish colonies is more constant. They have a tendency to develop into anaerobes, especially if recently isolated. They may develop on gelatin at 16 C. and coagulate milk after a lapse of four or five days. They develop best on bile mediums of the strongest concentration. They are capable of development in mediums in which ethylhydrocupreine hydrochloride is found in concentrations of 1:10,000 and 1:20,000. They show a slight resistance to heat (half an hour at 60 C.). They have no real pathogenic effect even in the strongest doses on white mice and on rabbits, in which subcutaneous injection may produce a torpid abscess that is spontaneously cured on opening. Bacteriologic diagnosis is of great importance in cases in which specific serotherapy or vaccinothérapie is held necessary. The clinical course of the disease is generally long and benign, owing to the lack of virulence of the enterococci. The course, however, is more rapid and accompanied by more serious symptoms when the causal agents are the virulent staphylococci. Incisions made in the foci of infection following phlegmonous adenitis due to attenuated bacilli constitute sufficient treatment.

Medicina Ibera, Madrid

1: 817-852 (June 10) 1933

- *Quinidine Treatment in Heart Diseases. F. Vega.—p. 817.
Pure *Staphylococcus Septicemia*: Four Cases. G. Suarez.—p. 830.

Quinidine Treatment in Heart Diseases.—Vega warns against the dangers of quinidine treatment in heart diseases and states that it is advisable to restrict the administration of quinidine (especially of quinidine sulphate) and to prescribe it

only in cases controlled by the electrocardiogram which do not demand the administration of digitalis. Quinidine treatment is indicated in arrhythmia not complicated by cardiac insufficiency, in alterations of the muscular fibers of the heart or advanced mitral stenosis, in early and paroxysmal auricular fibrillation without cardiac decompensation and in arrhythmia of thyrotoxic origin, intractable to the causal treatment. It is contraindicated in cardiac myopathy, in carditis in evolution with active infection, in advanced mitral stenosis of old duration and in cases of intense circulatory insufficiency in which a cardiotonic treatment with digitalis is the only indication to obtain a normal rhythm of the heart. Digitalis, as preliminary treatment to the administration of quinidine, may cause heart failure. Before administering quinidine it is necessary to wait until all the digitalis stored in the organism is eliminated, in order to avoid any dangerous synergetic reaction and because digitalis may produce a latent block of the heart which may rapidly develop by the administration of quinidine and cause death. During the period preceding the administration of quinidine, insulin may be given to great advantage. Although most of the satisfactory results of quinidine are obtained in patients in whom digitalis has not been previously used, it seems advisable to keep in mind that digitalis is the most proper treatment of auricular fibrillation and, on this basis, to administer it in order to reestablish the potentiality of the cardiac muscle by increasing the coronary nutrition. If digitalis does not cause the heart rhythm to become normal, it is advisable to give quinidine according to the indications previously stated. Quinidine treatment gives better results in auricular paroxysmal fibrillation than in chronic fibrillation. The latter, according to Pardee's dictum, is a truly auricular myocarditis in which the administration of digitalis is the only sure resource. Quinidine, because it causes intense depression of the heart, should be carefully prescribed and the physician should observe the patient as frequently as possible. It is for these reasons that its use should be excluded both from emergency medication and from rural practice.

Archiv für Kinderheilkunde, Stuttgart

99: 131-192 (May 30) 1933

- Pulmonary Abscess and Pulmonary Gangrene During Childhood. H. U. Köttgen.—p. 131.
- *Clinical Significance of Amidopyrine-Fast Fever in Diseases of Nurslings and Small Children. G. Petrányi.—p. 145.
- Experiences with Acetarsone in Congenital Syphilis. Baumbach.—p. 151.
- *Relations Between Acetonemic Vomiting and Scarlet Fever. L. von Kostyal.—p. 160.
- Gonorrhea in Children. L. von Dobszay.—p. 171.
- Incubation Period in Erythema Nodosum. D. von Moritz.—p. 177.
- Calcified Solitary Tubercle in Brain in Tuberculous Meningitis. Johanna Borchardt.—p. 181.

Amidopyrine-Fast Fever.—Petrányi observed that, in nurslings and small children who have uncomplicated pneumonia or influenza, the fever can be checked by adequate doses of amidopyrine. If the fever does not disappear, or if the temperature rises again after a while, that is, if the fever becomes "amidopyrine-fast," a malignant change in the primary disease must be assumed (toxic pneumonia, influenza), or a complication is developing or already present. Unsuccessful antipyresis frequently has a diagnostic value in pediatrics, because as a rule the fever becomes amidopyrine fast before the development of the clinical symptoms. Failure of the antipyresis has a prognostic significance, since the fever that becomes refractory during the first few days indicates malignancy of the primary disease. If the fever increases in spite of the administration of amidopyrine, this also is a bad sign. However, the fact that the fever can be influenced by amidopyrine is no proof of the benign character of the disease.

Relations Between Acetonemic Vomiting and Scarlet Fever.—In patients with scarlet fever the history nearly always reveals vomiting and the urine usually contains acetone, according to von Kostyal. He thinks it probable that acetonemia is present before the exanthem becomes manifest. Acetonemia is also present in conditions in which scarlet fever develops as a complication, such as in burns, after surgical interventions, in tonsillitis and after delivery. Moreover, other cutaneous eruptions, such as urticaria, have been noted in patients with acetonemia. Urticaria develops occasionally during menstruation, and it has been determined that menstruation is accom-

panied by impaired hepatic function, acidosis and acetonemia. The author considers three modes of pathogenesis of scarlet fever, the exogenous (pathogenic micro-organisms) the endogenous and a combination of these two factors. He calls attention to the rôle of the diet in the development of scarlet fever. An excess of milk and eggs, particularly if there is an anaphylaxis toward these foods, impairs the liver, in which case the organism is no longer protected against toxins. The author points out that it would be interesting to determine whether diet can influence the Dick test, or what influence an acetonemic condition exerts on the Dick test. The fact that it was possible to arrest acetonemic vomiting by means of intravenous administration of convalescent serum from scarlet fever patients is another indication of a relation between the two conditions. Persons who do not contract scarlet fever, although they are exposed to it, are not necessarily immune to it but do not develop it because their skin is incapable of producing the exanthem. The author reports the cases of eight puerperal women in one ward, some of whom developed scarlet fever while others developed tonsillitis or tonsillitis with urticaria; yet none of them had had scarlet fever previously, and it is hardly possible that the pathogenic organism was not the same in all these cases. He cites border cases between scarlet fever and acetonemic vomiting. He thinks that the incidence of concurrence of acetonemic vomiting and tonsillitis is practically the same as that of scarlet fever and differs from the latter only by the absence of the exanthem. He does not consider all these ideas "proved facts" but thinks them worthy of further investigation.

Beiträge zur klinischen Chirurgie, Berlin

157: 561-682 (June 14) 1933

- *Bone Atrophy After Fractures. E. R. Heydemann.—p. 561.
- Criteria for Estimation of Injury to Vertebral Bones in Roentgenograms. C. Gültig and A. Herzog.—p. 593.
- Inflammation in Normal and in Goitrous Thyroid Glands. O. Hoche.—p. 602.
- Statistics of Roentgen Diagnosis of Conditions of Stomach and Duodenum and Improvement in Method. E. Ruckenstein.—p. 607.
- Cardiospasm in Children. J. Hansen.—p. 617.
- True Bilateral Hernia Through Esophageal Hiatus. M. Makkas.—p. 623.

Bone Atrophy After Fractures.—Heydemann states that atrophy of the bone is demonstrable in roentgenograms after a loss of not less than 15 per cent of calcium. Acute traumatic atrophy of the bone is the result of a circulatory disturbance. The author emphasizes that it is the interference with the venous return and the presence of compensatory hyperemia rather than the interference with the arterial blood supply that is responsible. The more tissue destruction, soft or bony, the quicker and the more pronounced is the atrophy of the bone. Extensive traumatization of soft tissues is more likely to cause atrophy of the bone than extensive damage to the bone without much accompanying destruction of the soft tissues. The first evidence of atrophy is usually seen in the metaphyses and in the subchondral areas. Atrophy of the bone delays healing in adults and retards bony growth in the young. Pure atrophy of disuse occurs only in elderly people and is a matter of months, whereas acute traumatic atrophy can be observed as early as two weeks after a fracture. Some degree of atrophy occurs after most fractures and is demonstrable in roentgenograms if sufficient attention is paid to the peripheral portions of the bone close to the joint. The author feels that the subject of atrophy of the bone deserves more attention because it is frequently the cause of pain on passive or active movements.

Medizinische Klinik, Berlin

29: 797-830 (June 9) 1933

- *Acute Circulatory Weakness and Its Treatment. J. Külbs.—p. 797.
- Significance of Tonsils and of Adenoid Growths for Development of Child. B. Leichtenritt.—p. 800.
- Action Mechanism of Parapulmonary Oxygen Administration. E. Flaum and I. Kugler.—p. 804.
- Prophylaxis and Therapy of Whooping Cough by Means of Vaccine. E. Stransky.—p. 807.
- *Retraction of Exophthalmos After Ovarian Therapy. L. Halpern.—p. 808.
- Spontaneous Rupture of Esophagus. H. L. Popper.—p. 810.
- Embolism Following Diphtheria. F. Barber.—p. 811.
- New Investigations in Meteorology and Climatology. F. Kerner-Mariaum.—p. 812.

Acute Circulatory Weakness and Its Treatment.—Külbs emphasizes that, although heart and vessels are so closely connected that they can hardly be considered separately, it is

nevertheless advisable to differentiate vasomotor weakness and heart failure in the therapy of circulatory insufficiency. Vasomotor weakness may develop in the course of many different conditions, such as a number of infectious diseases, various forms of poisoning, overexertion and sudden changes in the temperature. He describes two cases indicating that severe, life-endangering conditions may develop as the result of hypersusceptibility to external stimuli or to overexertion, without demonstrable cardiac or vascular involvement. Circulatory weakness may develop in arteriosclerosis, in mitral stenosis and in mental excitations, perhaps as the result of an overtaking of the extracardiac sympathetic nervous system. Acute failure of the cardiac muscle is most frequently the result of mechanical factors, of direct or indirect traumas, or of thrombi in the heart or in the coronary system. That septic infectious diseases may lead to toxic impairment of the musculature has been proved repeatedly. In this event not only the vasomotor apparatus but also the cardiac muscle is at fault. This disturbance can be experimentally produced in animals poisoned by means of digitalis or of strophanthin, and the electrocardiogram usually shows sinus tachycardia, extrasystoles and ventricular fibrillation. Disorders in the lesser circulation, such as spontaneous pneumothorax, hemothorax, pulmonary infarct and pulmonary edema, and disturbances in the coronary circulation may lead to cardiac insufficiency. The author discusses the independence of certain vascular regions and shows how the disturbances in each of them can best be counteracted. In case of the coronary arteries, dilatation can be effected best by means of nitrites, xanthines (caffeine, theobromine or a theophylline preparation) or epinephrine, whereas constriction can be obtained by nicotine. He discusses the treatment of disturbances in the pulmonary system, the cerebral vessels, the splanchnic region and the cutaneous vessels, and of cardiac weakness, operative shock, cardiac asthma, angina pectoris and infarcts.

Retrogression of Exophthalmos After Ovarian Therapy.—Halpern reports the history of a girl, aged 21, who, eight months previously, had developed an exophthalmos on the right side. An enlargement of the thyroid was not noticeable and the basal metabolism was normal. But at times there was slight tachycardia, and the fingers showed a slight tremor. There were no signs for a local etiology of the exophthalmos. The history revealed that menstruation, although regular, was of short duration and that the flow was scanty. Libido was entirely absent. The genitalia were somewhat hypoplastic. The assumption of a correlative regulation of thecretory organs and the ovarian insufficiency (scanty menstruation, hypoplastic genitalia, lack of libido) induced the author to try ovarian therapy. The patient was given desiccated ovarian substance three times daily. After three weeks a considerable improvement of the exophthalmos was noticeable and the menstruation that set in during the third week of the ovarian treatment was more profuse and lasted longer. After the exophthalmos had largely disappeared, an attempt was made to discontinue the ovarian therapy, but the protrusion of the eye returned. After five weeks the exophthalmos had completely disappeared.

Münchener medizinische Wochenschrift, Munich

80: 875-914 (June 9) 1933

- *Ileus. W. Anschütz.—p. 875.
- Mineral Metabolism in Nurslings. E. Rominger and H. Meyer.—p. 879.
- Genuine Epilepsy. G. Stertz.—p. 881.
- Aspects of Monolymphocytic Angina. F. O. Höring.—p. 883.
- Care of Health and Beauty of Eye. L. Heine.—p. 885.
- *Surgical Disorders of Stomach and Human Psyche. A. Krecke.—p. 888.
- Staphylococcinfection. A. Gäch.—p. 891.
- Early Treatment of Poliomyelitis. K. Ochsenius.—p. 891.
- Puncture Scalpel. H. Walawelski.—p. 893.
- Further Suggestion for Introduction of Uniform Records for Blood Donors. F. Puntigam.—p. 893.
- Effective Method of Resuscitation in Drowned Persons. F. Mocny.—p. 894.

Ileus.—In discussing diagnosis, Anschütz states that during the early stage the symptom of the metallic, splashing sound is significant, provided it is accompanied by intestinal occlusion that cannot be overcome by enemas. He emphasizes the great diagnostic value of roentgenoscopy and states that the contrast clyster does not have to be feared, since it is less trying for the patient than a rectoscopy. He discusses the indications for surgical intervention and he stresses the value of early opera-

tion. As to the method of operation, he advises that the incision be made as near the obstruction as possible and that eventeration be avoided. Evacuation of the obstructed intestine during the operation he considers unnecessary and inadvisable. He points out that in case of incarcerated hernia evacuation is not done, although the condition of the intestinal wall and the intestinal contents are practically the same as in ileus. Moreover, evacuation involves great dangers, particularly infection, and is inadvisable in view of the reestablishment of the intestinal peristalsis. In comparing the results of operations in which the intestine was opened with those of interventions in which the intestine was left intact, the author found that the mortality rate was much smaller in the latter group (21 per cent compared to 64 per cent). These figures, as well as the analysis of the causes of death and the age of the patients in the two groups, convinced the author that the advantages of evacuating the intestine during the ileus operation do not outweigh the disadvantages.

Surgical Disorders of Stomach and Human Psyche.—Examination of 942 patients with gastric complaints revealed to Krecke that 186 had carcinoma and 242 had ulcer, while in 514 anatomic changes were not detectable. Most of the latter group had so-called primary gastro-intestinal disturbances. The examination revealed in most cases irregularities in the hydrochloric acid secretion, such as anacidity, subacidity or hyperacidity. Others had gastroparesis and still others were troubled with spastic conditions of the colon. However, the author is convinced that these disturbances are not the true cause of the disorder but that in the majority of these patients the psychic equilibrium is impaired. It has been proved that psychic impressions exert great influence on the function of the gastro-intestinal tract, and the anamnesis should aim to determine whether a psychic trauma preceded the gastric disturbances. It is necessary for the surgeon to have some psychologic knowledge, so that he may have an understanding of the psychic origin of certain disturbances. Many patients report spontaneously that their gastric disorder dates back to a great shock, anger or sorrow. The repetition of irritating experiences may cause the gastric disturbances. Merely to tell him that the disorder is a nervous condition is inadvisable, because "nervous" means to the average layman simply "imaginary." If the examination reveals that the hydrochloric acid secretion is disturbed, the patient should be told so, for this generally satisfies him. The physician may explain that this disturbance in the acidity is due to a change in the sympathetic nerves or in the solar plexus. If roentgenoscopy reveals changes in the duodenal bulb, the patient may be given an explanation of this condition. It is inadvisable, however, to designate disturbances in the intestinal activity simply as constipation, but it should be explained as a spastic condition of the intestine.

Strahlentherapie, Berlin

47: 201-400 (June 7) 1933. Partial Index.

- Interrelations Between Changes in Capacity of Reticulo-Endothelial System to Store Dyestuff, Bactericidal Power of Blood and Mineral Content of Tissues in Irradiated Rabbits. Y. Koga.—p. 201.
- Recent Opinions About Nature of Photochemical Processes and Their Relations to Biologic Processes. W. Frankenburg.—p. 233.
- Measurement of Quality of Rays. H. Holthusen and R. Braun.—p. 263.
- *Therapeutic Modification of Polycythemia Rubra by Roentgen Rays. H. Holfelder and A. Reisner.—p. 274.
- Urinary Pigments After Roentgen and Radium Irradiations: Influence of These Rays on Erythrocytes. K. Herold and H. Meissner.—p. 291.
- Permanent Sterilization by Radium. P. Jönson.—p. 309.
- Chorio-Epithelioma of Vagina Cured by Radium. F. Gäl.—p. 322.
- Granulosa Carcinoma of Ovary: Especial Position in Regard to Clinical Aspects, Histology and Ray Therapy. H. O. Kleine.—p. 326.
- *Clinical Experiences with Protracted-Fractional Intensive Roentgen Irradiation in Inoperable and Relapsing Malignant Tumors of Genitalia. P. Schumacher.—p. 338.
- Exclusion of Kidneys by Means of Roentgen Irradiation. E. Navratil.—p. 348.
- After Treatment of Extirpated Roentgen Carcinoma. K. Gütig.—p. 390.
- Abnormal Hair Growth As Result of Roentgenologic Examination. H. Schlathöfer.—p. 393.

Roentgen Therapy of Polycythemia Rubra.—Holfelder and Reisner report the histories of fifteen patients with polycythemia. In fourteen the polycythemia was the Vaquez-Osler type with enlargement of the spleen and with normal or slightly increased blood pressure, and in one it was of the Gaisböck type with high blood pressure but without enlargement of the spleen. The authors gained the impression that roentgen irra-

diation of the marrow of the tubular bones influences the blood picture as well as the general condition, and they irradiated the tubular bones in the following sequence: both legs below the knee, the right thigh, the left thigh, and the upper part of the right and left arms. Since the marrow of the sternum is an important element in polycythemia, they irradiated it also, and in severe cases they applied the roentgen rays likewise to the spinal column; but they do not consider so important the irradiation of the flat bones, particularly the scapular and pelvic bones, although some authors have expressed the opinion that the increased hematopoiesis of polycythemia involves mainly the short and flat bones. In order to be effective, the single doses should be from 70 to 90 per cent of the unit skin dose, for smaller doses do not produce such good effects. It is advisable to irradiate the tubular bones in rapid sequence, because smaller doses administered after longer intervals readily accustom the patient to the rays. In successful irradiation, the total doses varied between 6,000 and 12,000 roentgens administered in from four to seven weeks. The irradiated fields should be as large as possible (20 by 24 cm.). If there is a relapse, irradiation should be repeated but the patients are usually well for from nine months to two years and the tissues have time to recover from the effects of the large doses sufficiently, so that a new series of treatments can be given without danger. Roentgen irradiation of the entire body has also been recommended for the treatment of polycythemia, but the authors consider irradiation of the spleen, included in this generalized treatment, a disadvantage and therefore recommend that the spleen be cut off from the rays by lead protectors. Bucky obtained a decrease of the erythrocytes by irradiation with borderline rays. The slight penetrability of these rays makes it doubtful whether they influence the bone marrow directly, and Bucky supposes that the bone marrow is influenced indirectly by way of the cutaneous sympathetic nervous system. The authors think that irradiation of the marrow of the tubular bones by means of large fields and high doses of hard rays is still the method of choice in the treatment of polycythemia.

Roentgen Irradiation in Inoperable Tumors.—The favorable results obtained with protracted fractional intensive roentgen irradiation in inoperable carcinomas of the tongue, the tonsils or the hypopharynx induced Schumacher to employ the same treatment in inoperable or relapsing malignant growths of the female genitalia and of the breast. His technic was such that only one field was irradiated a day with a surface dose of 200 roentgens. When the general condition or the blood status was greatly impaired, the irradiation was discontinued for several days. In tumors of the genitalia the rays were generally applied to four fields, two abdominal and two sacral, or one abdominal, one dorsal and two lateral fields. The focus-skin distance was from 50 to 60 cm. Carcinoma of the breast was usually irradiated as one field and at a distance of from 70 to 80 cm. The aim was to apply ten times 200 roentgens to each field. The focus doses averaged from 2,000 to 3,000 roentgens. The treatment required as a rule from four to six weeks. In the beginning the irradiations were usually well tolerated, but toward the end the patient's general condition was frequently such that the irradiations had to be interrupted for a while. Nearly all the patients lost weight. The blood counts, taken twice a week, revealed a decrease of the leukocytes, particularly the lymphocytes, but the changes in the other formed elements of the blood were relatively slight. Generally, the skin reactions did not appear until after the sixth application, but toward the end of the irradiations the fields were swollen, erythematous and sprinkled with red stippling. The sacral field often showed considerable exfoliation, which subsided within three weeks. The urinary bladder and the intestine, which in the pelvic irradiations received considerable doses, showed comparatively slight reactions. Of eight inoperable carcinomas of the uterus, three reacted so favorably to the treatments that only small remnants persisted at the end of the treatment, while three similar cases remained refractory and two were exacerbated during the treatment. Two recurrences in the lateral pelvic wall disappeared entirely following the protracted treatment, but a number of uterine carcinomas that had already been unsuccessfully treated with radium were refractory to protracted intensive roentgen treatment. In twelve inoperable ovarian carcinomas the therapeutic

results of the protracted roentgen treatment were considerably more favorable than in the uterine carcinomas. Not one of the twelve cases was entirely refractory. Recurrences of mammary carcinomas likewise reacted favorably. However, sarcomas could not be influenced by means of this method. A disadvantage of the protracted roentgen irradiation is that the initial favorable results may eventually be reversed later, in that the metastases grow faster. The author considers this a warning against forced irradiation and against a further increase in the dosage administered at one sitting.

Bibliotek for Læger, Copenhagen

125: 143-174 (April) 1933

Investigation on Kidney Function According to Rehberg's Creatinin Method. H. C. A. Lassen.—p. 143.

*Phosphatases of Organism. E. Jacobsen.—p. 162.

Phosphatases of Organism.—Jacobsen's experiments indicate that the same enzyme sets free the various phosphoric esters, and he suggests the term "general phosphatases" for this enzyme. His further experiments establish a new, specific phosphatase. The substrate is found in the phosphates of the blood corpuscles. The new principle is relatively abundant in liver extracts, in which the content of general phosphatase is small, while kidney extracts, in spite of a large content of the general phosphatase, poorly set free the phosphates of the blood. Treatment with alcohol weakens the new principle more than the earlier known principle and, unlike the latter, it is not destroyed by heating in weak acid solution.

Finska Läkaresällskapets Handlingar, Helsingfors

75: 319-420 (April) 1933

Occupational Mercurialism. J. Almqvist.—p. 319.

*Skin Tuberculosis in Lepers. H. P. Lie.—p. 338.

*Rosacea-Keratitis. A. Kissmeyer.—p. 346.

*Casuistic Contribution to Question of Skin Pigmentation and Addison's Disease. R. Ehrström.—p. 355.

*Pathogenesis and Therapy of Eclampsism. K. A. Hoffström.—p. 360.

Histologic Changes in Mammary Glands in So-Called Gynecomastia and Its Relation to Cystic Mastopathy in Men. C. von Numers.—p. 388.

Skin Tuberculosis in Lepers.—Lie reports a case of leprosy with scrofuloderma of the neck. Typical tubercle bacilli were cultivated from the swollen lymph nodes of the neck. Necropsy showed tuberculous changes in these glands and in one bronchial gland. He states that, since different disorders may appear simultaneously in leprosy, the causes of processes not typically leprosy must be carefully studied and not simply referred to the *lepra bacillus*.

Rosacea-Keratitis.—Kissmeyer describes a marked case in a woman, aged 33, with pannus-like vascularized infiltration, deep subepithelial whitish, often calcium-like, infiltration and ulceration of the cornea. He believes that a number of the cases described as rodent ulcer of the cornea are probably of the rosacea kind. Therapy consists partly in application of sulphated bitumen-zinc-petrolatum ointment and partly in removal with a sharp curet.

Eclampsism.—Hoffström ascribes the primary cause of eclampsism to a hypocalcemia due to hypofunction or dysfunction of the parathyroid glands and finds his theory supported by the results of experiments with a four-day treatment plan. After venesection a combined treatment with parathyroid hormone, vitamin D and calcium is given, the first two days with inanition treatment and greatly limited water intake.

75: 421-512 (May) 1933

Arteriospasm in Perniosis. H. Haxthausen.—p. 421.

Generalized Zoster, One in Lymphatic Leukemia and One in Aleukemic Lymphadenosis: Two Cases. K. Marcus.—p. 429.

Tuberculous Lymphangitis in Penis. E. H. Hansteen.—p. 435.

Investigations on New Meinicke Clarification Reaction with Seven Different Readings. H. Boas.—p. 438.

Rabies in Finland. B. Grönroos.—p. 443.

*Atypical Amyloidosis. B. von Bonsdorff.—p. 447.

Atypical Amyloidosis.—In von Bonsdorff's patient, aged 51, there developed shortly after fracture of a rib and within two or three months firm, symmetrical tumor formations up to the size of a child's head, in the region of the large joints, with one below the right shoulder. Small, button-shaped tumors appeared on the tongue and in the oral mucous membrane. The tumors are thought to have originated in the soft parts and the destructive changes, roentgenologically established in the osseous system in the vicinity of the tumors, are assumed

to be due to pressure exerted by the tumor mass. These changes affected the bone marrow, causing a disturbance in the calcium metabolism with a tendency to hypocalcemia at the start of the disorder and hypercalcemia at the end. There were increasing exhaustion, without noteworthy increase in the size of the tumors, and fatal outcome after one and one-half years. The tumors, well defined from the surrounding tissue, consisted of deposits of a whitish yellow, homogeneous, amyloid-like substance, structureless and metachromatically stainable with cresyl and gentian violet. Transportation of the amyloid-like substance had apparently occurred to the regional lymph nodes. The kidneys revealed numerous atrophied glomeruli with signs of nephrosis. The tumor mass consisted mainly of a protein substance from which nine different amino acids were differentiated. Thirty-three cases of amyloid tumors are cited. The author ascribes classic as well as atypical amyloidosis to disturbances in the protein metabolism of the organism. In his opinion a relation exists between myelomas and atypical amyloidosis, whether or not the latter appears with multiple myelomas. He believes that in his case trauma was a factor in the origin of the atypical amyloidosis.

Hygiea, Stockholm

95: 369-416 (May 31) 1933

Effect of Chaulmoogra Oil on White Blood Corpuscle Roentgenogram. Ada Olsson.—p. 369.

*Bacteriophage Therapy of Infections of Urinary Tract. J. Hellström.—p. 372.

Bacteriophage Therapy of Infections of Urinary Tract.—Hellström's attempts with this treatment have not been encouraging, but he believes that with close cooperation between clinician and bacteriologist bacteriophage therapy may become more valuable.

Norsk Magasin for Lægevidenskapen, Oslo

94: 593-712 (June) 1933

Investigations on Blood Pressure in Healthy Men, Especially with Reference to Occurrence of Low Blood Pressure. H. J. Ustvedt.—p. 593.

Roentgen Examination of Postoperative Venous Blood Stream: Preliminary Report. J. Frimann-Dahl.—p. 609.

*Atypical Traits in Dementia Paralytica. H. Sæthre.—p. 612.

Intravenous Anesthesia with Evipan-Sodium. S. Widerøe.—p. 621.

*Gradenigo's Syndrome and Inflammation in Pyramidal Apex (Petrositis, Apicitis). A. Galtung.—p. 625.

*Multiple Tuberculous Spondylitis. H. Thrap-Meyer.—p. 641.

Balantidium Coli Diarrhea and Intestinal Polyposis. O. Hanneborg.—p. 650.

Contribution to Treatment of Condylar Y Fractures with Some Fractures of Diaphysis: Preliminary Report. M. H. Gjessing.—p. 660.

Atypical Traits in Dementia Paralytica.—Sæthre says that out of 135 cases of dementia paralytica without any anti-syphilitic treatment four presented a completely negative Wassermann reaction in the blood and spinal fluid. One of these, observed for one year during which no treatment was given, gave a negative Wassermann reaction at four different times. Necropsy disclosed a typical picture of dementia paralytica. Two cases present exceptions to the rule that patients with neurorelapse do not later on develop dementia paralytica. In the fourth case, one of locomotor ataxia treated with malaria, paroxysmal megalomania ("psychic Jackson spasms"), developed one and one-half years later. This gradually changed to a fairly typical dementia paralytica.

Gradenigo's Syndrome and Inflammation in Pyramidal Apex.—Galtung reports four cases in which Gradenigo's syndrome appeared after an acute otitis media, in one case before, in the three after, antrotomy. All patients recovered, one after antrotomy alone, two after antrotomy with revision, and one after conservative medical operation according to Bárány with subsequent Frenchner's petrositis operation. In only one case was there roentgenologic and clinical proof of inflammation in the pyramidal apex. In a fifth case necropsy showed inflammation in the pyramidal apex without its having produced Gradenigo's syndrome wholly or in part.

Multiple Tuberculous Spondylitis.—Thrap-Meyer describes seven cases, six presenting two tuberculous foci in the spinal column and one presenting three, all separated by sound vertebrae. A lymphohematogenic origin of these multiple foci is regarded as most frequent and probable, and contact infection through a sedimentation abscess extremely rare. In

one of these cases the latter mode of infection is thought probable. In all the cases the subjective symptoms were localized about the caudal focus. There were no symptoms from the spinal cord.

Ugeskrift for Læger, Copenhagen

95: 633-662 (June 1) 1933

Perforating Gastric Ulcer: Epidemic Serositis—Epidemic Myalgia. E. Warburg.—p. 633.

*Intestinal Invagination in Children. H. Thomsen.—p. 639.

Investigations on Capillary Resistance in Copenhagen School Children with Reference to Vitamin C Deficiency in Diet. C. Friderichsen and M. Petri.—p. 643.

Operation for Hammer-Toe in Little Toe. A. Bernsten.—p. 646.

Intestinal Invagination in Children.—Thomsen reports thirty-three cases treated operatively without attempted bloodless reposition from 1917 to 1932. Of this number the seventeen children operated on within twenty-four hours all recovered, together with three others. The total mortality was 39 per cent.

Uppsala Läkareförenings Förhandlingar, Uppsala

38: 1-438 (May 20) 1933

Causes of Disease According to Israel Hwasser: Medicolegal Study. G. Johnsson.—p. 1.

*Contribution to Knowledge of Tuberculosis of Aorta and Tuberculous Aneurysm of Aorta. N. Gellerstedt and O. Säfwenberg.—p. 165.

Significance of Modern Hormone Study in Gynecology. A. Westman.—p. 183.

*Contribution to Knowledge of Changes in Brain in Normal Involution of Age. N. Gellerstedt.—p. 193.

Uppsala Medical Society 1832-1932: Pages from History of Our Medical Development. U. Quensel.—p. 409.

Tuberculosis of Aorta and Tuberculous Aneurysm of Aorta.—Gellerstedt and Säfwenberg describe a case of erosion of the abdominal aorta due to an old cheesy paravertebral tuberculosis of the lymph nodes. As a result of the erosion a false retroperitoneal aneurysm developed, which caused a rupture-like protrusion of the diaphragm into the pleural cavity. The roentgen diagnosis was intra-abdominal tumor. On operation the pulpy discharge from the tumor suggested sarcoma or Grawitz tumor. Death was due to hemorrhage. Necropsy revealed an extensive miliary tuberculosis in most of the organs with notably small and closely located tubercles, to some extent localized in the glomeruli in the kidneys and having a marked tendency to necrosis in the liver and spleen. The twenty cases of tuberculosis of the aorta with formation of aneurysm found in the literature are cited. Diagnosis has not yet been made during life, but in the author's opinion this should theoretically not be impossible.

Changes in Brain in Normal Involution of Age.—The results of the examination of fifty brains of persons aged at least 65 years, mostly from the middle class of Munich but including two of the élite, are discussed by Gellerstedt, with remarks on the pathogenesis and the relations between anatomic results and clinical symptomatology. He says that in the aging brain the reduction of ganglion cells in the cerebral cortex usually occurs in tracts. With regard to fatty changes in the ganglion cells, earlier results are confirmed. The atrophy of the nerve cells of the cerebral cortex is not seldom combined with the appearance of atrophied or sclerotic ganglion cells. Granulovacuolar degeneration seems to be common in normal old age but localized in Ammon's horn. Alzheimer's change in the filaments is not uncommon even in mentally normal aged persons but is practically always localized in the allocortex of the temporal lobe. The senile plaques occur far oftener than is commonly supposed, with several local variants and types. Atrophy of medullary fibers is frequently demonstrable, at least in the cortex. The typical qualitative changes of the glia cells show a slightly progressive character. Regressive changes in the glia cells do not belong to the senile picture. The fatty changes in the glia afford a good indication of the degree of tissue atrophy. Histologically demonstrable iron is more extensive in the aging brain than was thought formerly. "Concrements" containing iron, probably never absent in the aged brain, vary greatly individually. Senile fibrotic changes of the blood vessels are to be distinguished from regular arteriosclerosis and probably play a part in the origin of many histologic changes of the aging brain. Plexus sclerosis is to be regarded as a phenomenon of age. Ependymitis is not characteristic of age.

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THE CURABILITY OF CANCER OF THE COLON, RECTOSIGMOID AND RECTUM

CHAIRMAN'S ADDRESS

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Any consideration of the ultimate results following extirpation of cancer of the large bowel, rectosigmoid and rectum which fails to take into account factors that influence favorably or unfavorably the number of survivors after a given term of years is obviously an incomplete one. While one may glibly assert and actually prove by statistics that the prognosis following successful eradication of cancer of the large bowel, rectosigmoid and rectum is more favorable than elsewhere in the alimentary tract, some reasons for these satisfactory end-results should follow in logical sequence. It is my feeling that the most important factor influencing prognosis in cancer of this or other locations is the intrinsic activity of the neoplastic cells, particularly their ability to differentiate or not differentiate from the normal. That this influence is unquestionably affected by modifying conditions present in the majority of instances is, I believe, incontestable. The extrinsic influences, or the modifying factors, which are of grave importance, are such general conditions of the host as age, coexisting debilitating diseases, and the duration and direction of the growth. To these may be added secondary factors which are the direct result of the presence of malignant neoplasms, such as anemia, loss of weight and glandular metastasis, as well as other factors local to the growth, including fixation, perforation and other local complications.

Without going into any great detail I reiterate the oft repeated statement, which has become almost axiomatic, that the youth of an individual is an unfavorable factor as compared with the less active tissue barriers of middle life or advancing years. Young tissues so potent in their resistance to acute, fulminating infectious processes are helpless to withstand the formidable offense of cancer. Their vital elasticity and resilience is far less hostile to neoplastic invasion than that of the tissues of senescence.

Some years ago, Comfort and I reviewed a series of cancers of the rectum in young people and found the prognosis hugely more unfortunate than in patients of the average age group. The duration of symptoms was shorter, the percentage of metastasis greater, the opera-

bility rate lower, and the percentage of ultimate satisfactory cures after periods of three and five years greatly decreased. The total good results, we estimated, were 50 per cent less, and the total poor ultimate results 20 per cent more, than in a group of patients of all ages taken together. In other words, the malignant growths were more active here and of a higher grade, according to Broder's index of malignancy, and consequently metastasized earlier and with a lethal outcome in a much higher percentage of cases than in the group of all age patients.

DURATION

The duration of the growth is a factor of importance, which is estimated with great difficulty, since persons do not know of the presence of a cancer until it has produced obstruction or a break in the mucous membrane which causes blood to appear in the stool. The average patient having a cancer of the colon, rectosigmoid or rectum will have known of the symptoms on an average of ten months or more before seeking advice. Naturally, ample opportunity is thus afforded a rapidly growing, highly malignant tumor to disperse cells through the lymph or blood-channels to distant bases, yet apparently this is compensated for in large measures by the low grade of the growth in the majority of cases: perhaps an explanation also of their well known tendency to remain local over a relatively long period of time. Such considerations as loss of weight, anemia and cachexia may be dismissed with the suggestion that they are either the result of a long standing malignant condition or distant metastasis, with the exception of a group of cancers of the right colon, which produce a profound anemia without visible loss of blood and without presenting any other symptoms pathognomonic of this location.

SIZE

That size of the growth has little if anything to do with the prognosis has been proved by observations on every segment of the colon. The diameters of the growths removed from patients who obtained five year surgical cures averaged up to the same figure as those obtained from the patients who died of recurrence. The probable explanation lies perhaps in the fact that the highly malignant tumors metastasize early when the parent growth is still small, while the less malignant cancers sometimes assume huge proportions before dissemination to the lymphatics begins. From the practical standpoint of operability, one sometimes resects large growths, which are frequently considered borderline cases because of their fixation, only to find no glandular involvement and to be rewarded by a satisfactory ultimate result. Such types are more likely to be discovered among right colonic cancers than those of the left side, because growths in the right half are usually

large, ulcerating, infected, and frequently more or less fixed from inflammatory adhesions rather than from direct extension of the malignant process. Actually, cancers of the cecum and ascending colon are the largest of all the growths found in the colon, whereas those in the sigmoid are the smallest; yet it is statistically shown that left colonic lesions are somewhat poorer of prognosis than are tumors of the right half.

TABLE 1.—Incidence of Glandular Involvement

| | |
|--------------|-------------|
| Grade 1..... | 27 per cent |
| Grade 2..... | 33 per cent |
| Grade 3..... | 50 per cent |
| Grade 4..... | 56 per cent |

DIRECTION OF GROWTH

One point which I feel has not been sufficiently emphasized in the past and which I believe is of considerable importance from the standpoint of prognosis is the direction of the growth. Whenever cancer of the large bowel, rectosigmoid or rectum—and all are adenocarcinomas—takes on the appearance of a polypoid or adenoid-like growth and pouches into the lumen of the bowel, one finds a malignant condition of low or average grade and little or no nodal involvement. On the other hand, when the growth is a punched-out ulcer with a large active base penetrating toward the serosal coat of the bowel, one is more likely to find a higher grade of malignancy and a larger percentage of nodal involvement.

In a study of a series of cases of cancer of the colon excluding the rectum, Olson and I found that the percentage of five year cures in growths which projected intraluminally was 62 per cent, against 41 per cent for growths that extended toward the serosa.

MATERIAL STUDIED

The material for this study on the curability of cancer of the large bowel, rectosigmoid and rectum consisted of 753 cases which were closed at the end of operation with a hopeful prognosis and either have resulted in survival over a period of five years without recurrence or have ended fatally of recurrence. The series ranges from patients who had recurrences and died a few months after surgery to patients who are now living more than twenty years after the successful removal of their cancer. In every case the pathologic specimens were available for study. The distribution of the tumors is interesting to note and is of significance prognostically. There were 187 cases of cancer of the right colon, 266 cases of the left colon, and 300 cases of cancer of the rectosigmoid and rectum. The rectosigmoid and rectal specimens were considered as a group and the colon cases arbitrarily divided into right and left halves. This division of the colon into two segments follows the natural embryologic cleavage as well as separates the two halves according to their type of symptomatology. The right half is a functional organ which develops with the small bowel and likewise has an absorptive duty; here the symptoms are physiologic disturbances. The left half of the colon, which is derived from the midgut, is a storehouse from the standpoint of function, and organic lesions in this segment produce obstructive phenomena.

I think it is not only feasible but desirable to make a distinction between the rectosigmoid and the rectum for the reason that cancers in the two locations are different symptomatically, prognostically and from the standpoint of surgical offensive.

INTRINSIC INFLUENCE

The second factor, namely, that of intrinsic influence, or the activity of the neoplastic cell, is in my judgment the most important single influence that governs prognosis. Bröders has called attention to the great difference in cancers the cells of which are undifferentiated, as compared with those which consist of differentiated cells. He has provided a system of grading the degree of malignancy on the basis of differentiation and has proved by a large series of cases that there is an important ratio between this differentiation of the cells and the ultimate outlook after treatment. The scientific criteria laid down by Bröders estimates the prognosis of cancer of the colon, rectosigmoid, rectum and elsewhere more accurately, I believe, than any other yardstick that is available.

Given the microscopic grading of the degree of malignancy in a case of cancer of the colon, rectosigmoid or rectum, and the information as to whether the glands on the specimen were or were not involved by malignant extension, one should be able to estimate with considerable accuracy the ultimate end-results. In this study it was found that the incidence of glandular involvement was in direct ratio to the grade of the malignancy as is shown in table 1.

Unquestionably, glands are involved in cancer of the colon and rectum at a late date in a high percentage of cases, for what reason I do not know, but I believe it is because of the uniformly low grade of the malignancy in these cases as registered by Bröders' index. That metastasis depends on and is in direct ratio to the intensity of the malignant invasion is, I believe, of basic significance in estimating prognosis. The evidence shows that cases with glandular involvement and cases without glandular involvement follow distinct lines and ratios, and that the incidence of five year cures in each case follows a definite progression.

Table 2 demonstrates effectively among other things that the high incidence of cases both with glandular involvement and without glandular involvement is in the average group, or group 2. Likewise the percentage of five year cures shows a direct curve, the highest five year cures being grade 1 without glandular involvement, and the lowest number of cures being grade 4 with glandular involvement. A grade 1 cancer without malignant glands has a four and one-half times better prognosis than a grade 4 cancer with malignant glands.

TABLE 2.—Grading in Cases With and Without Glandular Involvement

| | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|---|---------|---------|---------|---------|
| With Glandular Involvement (387 Cases) | | | | |
| Incidence..... | 97% | 51% | 25% | 12% |
| Five year cures..... | 44% | 24% | 13% | 15% |
| Without Glandular Involvement (466 Cases) | | | | |
| Incidence..... | 16% | 62% | 16% | 6% |
| Five year cures..... | 69% | 56% | 47% | 37% |

Table 3 shows the influence of glandular involvement on five year cures very strikingly. In the right colon are found 66 per cent of patients without nodal involvement alive at the end of five years; 56 per cent of cases of the left colon, and 48 per cent of the cases of the rectosigmoid and rectal cancers. In contrast to this, the right colon showed 39 per cent five year cures when nodal involvement is present as against 29 per cent in the left colon and 20 per cent in the rectum and rectosigmoid. The incidence of glandular involvement in the two halves of the colon was about the same, there

being a slight advantage to the left side; namely, 31 per cent as against 34 per cent. This is an unusual observation, since the ultimate prognosis in the right colon is slightly better than that of the left. Glandular involvement in the rectum, however, was considerably more frequently encountered than in either half of the large bowel, 46 per cent of the cases being recorded as showing malignant lymph nodes resected with the specimen.

TABLE 3.—Five Year Cures in Relation to Glandular Involvement

| | With Nodal Involvement | Without Nodal Involvement |
|----------------------|------------------------|---------------------------|
| Right Colon | | |
| Incidence..... | 34% | |
| Five year cures..... | 39% | 66% |
| Left Colon | | |
| Incidence..... | 31% | |
| Five year cures..... | 29% | 56% |
| Rectum | | |
| Incidence..... | 46% | |
| Five year cures..... | 20% | 45% |

It is apparent from table 4 that there is a definite correlation between the grade of malignancy and the prognosis as concerns not only the ultimate cure but likewise the rapidity with which recurrence takes place. There is great pathologic similarity between cancers of the colon and the rectum so far as grading is concerned, and one observes that a little more than half of the growths in both locations fall into grade 2.

The striking difference in the good results in the lower grades of malignant growths free of glandular involvement, as compared with the poor results obtained in the higher grades of malignant growths with involved glands, can leave no doubt as to its influence on the prognosis. As one reviews these tables, considering the relationship of glandular involvement to recurrence and postoperative life, and compares as in table 5 the five year cures in the different grades, one can scarcely escape the conclusion that the intensity of the malignant invasion is the most important factor in estimating prognosis, since the incidence of local glandular metastasis and distant implants as well depend directly on it. It seems significant, moreover, that the figures presented in these tables are the averages of a large group, while the study of the individual cases shows a considerable scattering from the median. What is prognostic for the average of a series is the dominant tendency of the individual case.

CHOICE OF SURGICAL METHODS

Methods of surgical offensive may readily be divided into three phases: (1) preliminary preparation; (2) technical maneuver; (3) postoperative care.

The principles of adequate preliminary decompression, and rehabilitation before exploration is undertaken may not be deviated from without considerable trepidation. It is an easily demonstrated fact that the vast majority of progressing neoplasms of the left colon, rectosigmoid and rectum present at some time prior to their exploration some degree of obstruction. True, it is rarely an acute stenosis, and this is a happy fact for both patient and surgeon; but the chronic increasing encroachment on the bowel lumen due to an encircling cancer in this location, though it frequently is overcome in part by purgation in attempts to empty the bowel, produces at the same time hypertrophy, edema and infection not only of the colonic wall but of the pericolic tissues, which definitely influences disadvantageously attempts to eradicate it.

Cancers of the right colon rarely produce acute obstruction but, on the other hand, are profoundly debilitating, dehydrating, and accompanied frequently by a marked anemia. Consequently the primary preliminary objective should be adequate emptying of the bowel by medical or surgical measures with a complementary regimen aiming at rehabilitation.

There are many arguments in favor of graded maneuvers in handling the vast majority of these cases: the choice of the actual operative procedure is distinctly different in the three locations.

My own preference of operation in the right colon is a graded maneuver as a routine. I prefer an end to side aseptic ileocolostomy at the first stage with a subsequent resection at a later date. I cannot emphasize too strongly the desirability of the end to side anastomosis. To sidetrack the fecal current as completely as possible and thus reduce the local infection around it is the primary object of a two stage operation. Not only can this be done much more satisfactorily by end to side operation, but the accomplishment of the second stage is greatly facilitated likewise. Furthermore, one often finds a large semifixed right colonic cancer distinctly more mobile and resectable after by-passing the fecal current over a period of time. I would not argue that it is not perfectly good surgical judgment to accomplish the resection and anastomosis in one stage in selected cases, but I believe that all such operative procedures should be regularly accompanied by a complementary ileostomy for decompression. My choice of procedure in dealing with growths beyond the hepatic flexure is an obstructive resection after whatever obstruction which has been present has been completely and adequately removed. The obstructive resection consists of radical resection of the growth and gland bearing tissues in immediate juxtaposition to it without either the hazards of primary anastomosis or the tendency to recurrence in the abdominal wall that follows a Mikulicz operation in 12 per cent of the cases. If at exploration of growths in the left colon one finds edema in the bowel wall, inflammatory reaction around the growth, and evidences of prolonged stenosis, unquestionably some decompressive measure is indicated as a first step. For this, I believe, a cecostomy by the Hendon method, using a large Pezzar catheter and witzelizing it, is preferable. This permits decompression of gas and evacuation of

TABLE 4.—Grading of Malignancy in Relation to Postoperative Length of Life

| | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|----------------------|---------|---------|---------|---------|
| Right Colon | | | | |
| Incidence..... | 16% | 53% | 21% | 10% |
| Five year cures..... | 68% | 60% | 48% | 37% |
| Left Colon | | | | |
| Incidence..... | 13% | 67% | 16% | 4% |
| Five year cures..... | 63% | 51% | 30% | 18% |
| Rectum | | | | |
| Incidence..... | 13% | 53% | 24% | 10% |
| Five year cures..... | 37% | 44% | 22% | 19% |

fecal content and at the same time allows through and through irrigations of the bowel against the time of secondary resection.

The second stage may be accomplished as an obstructive resection, or a direct anastomosis may be employed if one is satisfied with the blood supply to the two ends. Rarely, I think, should primary anastomosis with or without complementary ileostomy be attempted in the left colon, because the blood supply is uncertain. I have always been content to remove colonic cancers, be they in the right or left segment, with a complete disregard

to the length of time necessary to accomplish a successful extirpation. I do not feel that one is any more justified in giving grave consideration to the economic condition of the individual suffering with a malignant growth of the lower gastro-intestinal tract, so far as the selection of operation is concerned, than he is in operating against surgical mortality.

Problems of dealing with cancer of the rectosigmoid and rectum are many and complex. The ideal operation

TABLE 5.—*Relation of Grading to Five Year Cures*

| | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|----------------------|---------|---------|---------|---------|
| Five year cures..... | 63% | 51% | 31% | 24% |

has not yet been achieved because as the vast majority of surgeons agree the sacrifice of nature's splendid sphincteric apparatus is necessary in order to accomplish wide removal of the growth and adjacent tissue. There is some difference of opinion as to this, but my own feeling is distinctly in accord with the principles of operation as laid down by Miles. While I have not been able to do his operation as a routine without contracting the horizon of operability to a point at which I consider it too narrow, I agree with his principles heartily and practice a resection of the rectosigmoid and rectum in two stages which is almost identical with his operation in scope and principle. By this graded maneuver, which consists of an exploration and a single-barreled colostomy at the first stage, I have been able to resect many borderline growths which would certainly have been inoperable in the single stage. There still remains a definite field for operation of colostomy and posterior resection as practiced by Mummery. Jones's operation, which is a combined abdominoperineal resection in two stages, has many desirable features and his end-results suffer not at all in comparison with those of any other surgeon. The operation of segmental resection of the rectum with anastomosis, or the operation of amputation of the rectum leaving a sacral anus, may be indicated in a small group of carefully selected individuals. I have had little or no experience with either and am unconvinced of the desirability of employing them other than very occasionally.

OPERABILITY; MORTALITY; FIVE YEAR END-RESULTS

Operability and operative mortality are necessarily closely related. Too low a mortality figure reflects a low operability rate. While criteria of operability must be variable, they unquestionably should be broad, as they differ with the experience, boldness and technical skill of the operating surgeon. A fair standard of operability, I think, is one which urges the removal of all growths which are not firmly fixed to the abdominal parietes, or adjacent viscera, or have not metastasized to the liver, or those in patients whose physiologic status is so low as obviously to preclude any surgical intervention. It is difficult not to feel that there are times when a resectable growth should be removed even in the presence of liver metastasis as a palliative measure which provides a painless demise by ridding one of an ulcerating, obstructing, distressing lesion at a slight increase in operative mortality. By making every effort to extend the horizon of operability rather than contract it, one finds the death rate mounting somewhat rather than receding. But is it not worth while to maintain a hospital mortality of around 10 per cent if, by so doing, more patients out of a given number are found alive at the end of ten years after resection?

My own observations relative to operability and operative mortality are drawn from the reports of the colon service at the Mayo Clinic, where the material for this paper was obtained and which reports I presented for the past six years. During these years the operability never ranged below 50 per cent and in one year reached the highly satisfactory figure of 68 per cent. To maintain this operability rate has been a goal worth striving for, and to increase it is a hope that will probably not be realized until an earlier diagnosis in colon cases is arrived at and operation is undertaken before complications and metastasis have taken place.

In operating on the right colon during the past three years by the two stage method, I have done sixty aseptic ileocolostomies with four deaths, a mortality rate of 6.6 per cent. The mortality rate of the left half of the colon is invariably a few points higher than that of the right, but here the figures have not within the last three years exceeded 10 per cent for all types of resection. In obstructive resection I reported one series of twenty-three consecutive cases before a single casualty occurred. This low percentage, however, was advanced to 9.6 as a wider selection of cases for operation was made and a wider range of operability accepted.

In operations on cancer of the rectum and rectosigmoid the mortality figures vary even more widely than those of the colon, and one finds that the radical operations carry considerably higher death rates than the less extensive ones, such as colostomy and posterior resection, or local excision with or without colostomy, or sacrifice of the sphincter muscle.

My choice has been to employ the combined abdominoperineal resection in two stages whenever feasible, and with increasing experience I have been able to apply it in approximately three fourths of the operable cases. In the past two years and a half I have done eighty-two combined abdominoperineal resections in two stages with eight deaths; a mortality rate of 9.2 per cent.

Table 6 is an epitome of the statistical data of the total number of living and dead and the percentage of five year cures in 753 cases of cancer of the colon, rectosigmoid and rectum. It establishes a high percentage of cures over a long period of time in all three segments

TABLE 6.—*Relative Percentage of Cures in Relation to Situation of Lesion*

| | Total | Dead | Cures | Per Cent Cured |
|------------------|-------|------|-------|----------------|
| Right colon..... | 187 | 81 | 106 | 57.6 |
| Left colon..... | 266 | 139 | 127 | 47.7 |
| Rectum..... | 300 | 186 | 114 | 38.0 |
| Total..... | 753 | 406 | 347 | 45.8 |

| | Total Cases | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|----------------------|-------------|---------|---------|---------|---------|
| Number..... | 753 | 101 | 434 | 157 | 61 |
| Incidence..... | 13% | 58% | 21% | 8% | |
| Five year cures..... | | 63% | 51% | 31% | 24% |

of the large bowel. There is a noticeable decline in the percentage of cures as one rotates from right to left: the low grade right colonic cancer without glandular involvement showing 69 per cent, or better than two out of three patients alive and well at the end of five years, as against grade 4 cancer of the rectum with glandular involvement, which shows only 19 per cent alive and well at the end of the same time. When one considers that, including all grades in all segments of the lower portion of the alimentary tract, 46 per cent, or almost one out of two patients, are alive and free from recur-

rence at the end of five years and that this has been accomplished with an operability of from 50 to 60 per cent of the total group, the high curability of cancer of this portion of the gastro-intestinal tract seems established.

Security Trust Building.

THE TREATMENT OF POLYCYTHEMIA VERA

REPORT OF TWO CASES

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In the treatment of patients with polycythemia, in addition to the general measures employed it has been found necessary to use some agent or substance having the specific effect of destroying red blood cells without producing injury to the body as a whole. For this purpose various measures have been suggested, but at the present time there are only four that appear to warrant serious consideration; viz., irradiation, venesection, arsenic and phenylhydrazine. It is not our purpose in this paper to discuss the relative merits of these therapeutic measures, the advantages of each having been emphasized in recent articles, but we believe with Cole,¹ on the basis of the cases reported in the literature, that "results with phenylhydrazine appear to have been better than with other forms of treatment." This drug is now being widely used despite its well known effects as a powerful protoplasmic poison.

Because the therapeutic results with phenylhydrazine hydrochloride ($C_6H_5.NH.NH_2.HCl$) have been comparatively successful, the advantages of acetylphenylhydrazine ($C_6H_5.NH.NH.COCH_3$) have not been sufficiently recognized. Partly on the basis of earlier experimental work with the derivatives of hydrazine by one of us,² which showed the former compound to be much less toxic than the latter, Brown and Giffen³ considered the possibility that the acetyl substitution product may have therapeutic advantages. In the first edition of Cecil's Textbook of Medicine, Minot,⁴ in referring to the use of phenylhydrazine hydrochloride in the treatment of polycythemia, states that acetylphenylhydrazine may be less toxic and equally useful. In the second edition of this work, however, Minot⁵ makes no reference whatever to acetylphenylhydrazine. The patient employed by Bassett, Killip and McCann⁶ in their study of mineral metabolism in polycythemia vera was treated with acetylphenylhydrazine. The

authors are not aware of any other clinical studies of this condition in which acetylphenylhydrazine was employed.

There are approximately thirty reports in the literature attesting to the efficacy of phenylhydrazine hydrochloride in the treatment of polycythemia. A smaller number of reports, notably those of Barta,⁷ Giffen and Conner,⁸ McNamara and Sansum⁹ and Gouwens,¹⁰ have dealt with the untoward effects, severe and even fatal intoxications resulting from the use of this drug. Granting the possibility that with sufficient care these effects may have been largely avoided, it should nevertheless be emphasized that phenylhydrazine is a powerful protoplasmic poison, as first shown by Hoppe-Seyler,¹¹ and that even small amounts may give rise to symptoms of acute intoxication.

Our preference for acetylphenylhydrazine is based on the following considerations: (1) It is practically as effective as phenylhydrazine hydrochloride in red blood cell destruction. (2) The dosage may be controlled somewhat more readily. (3) It is less toxic than phenylhydrazine hydrochloride and thus affords a greater margin of safety in cases of overdosage and in those in which the cumulative and delayed effects of frequently repeated doses constitute a prominent feature.

This does not imply a disregard of the possibilities of acetylphenylhydrazine as a cellular poison. A substance that is so effective in blood destruction may be expected to have more general properties, but on the assumption that a compound of the type of phenylhydrazine is necessary in the treatment of polycythemia, it seems obvious that acetylphenylhydrazine possesses definite advantages. The action of both compounds has been considered in a recent study,¹² as well as in several earlier publications.

Our interest in this subject from a clinical standpoint has been stimulated by the course of two cases in which continuous acetylphenylhydrazine therapy was administered, one for a period of seven years, the other for a period of four and a half years:

REPORT OF CASES

CASE 1.—L. F., a white man, aged 30, first seen, June 13, 1919, complained chiefly of bleeding from the gums. A blood count showed red blood cells, 6,600,000; hemoglobin, 110 per cent (Sahli). He was not seen again until six and a half years later, Jan. 21, 1926, when he complained of dizziness, fulness in the head and a feeling of tightness around the heart. Excepting a very livid color to the skin and mucous membranes, and a moderately enlarged spleen, the physical examination was essentially negative. Laboratory examination revealed: red blood cells, 7,680,000; hemoglobin, 114 per cent; white blood cells, 7,900, with a normal differential count. The blood Wassermann reaction was strongly positive (it had been negative in 1919).

A short course of roentgen irradiation was given over the long bones, but without improvement in symptoms or in reduction of the red blood cell count. Owing to the severity of the symptoms, the patient was admitted to the John Sealy Hospital, March 7. Venesection (twice, 500 cc. each time) resulted in

7. Barta, Imre: Beitrag zur Entstehung der Thrombose bei Polycythämie nach Phenylhydrazinbehandlung, *Deutsches Arch. f. klin. Med.* **162**: 185-193, 1928.

8. Giffen, H. Z., and Conner, H. M.: The Untoward Effects of Treatment by Phenylhydrazine Hydrochloride, *J. A. M. A.* **92**: 1505-1507 (May 4) 1929.

9. McNamara, D. H., and Sansum, W. D.: Phenylhydrazine Poisoning; Report of a Case, *J. A. M. A.* **96**: 268 (Jan. 24) 1931.

10. Gouwens, W. E.: Polycythemia Vera, *Woodlawn Hosp. Clin. Quart.* **1**: 27-31 (March) 1931.

11. Hoppe-Seyler, Georg: Ueber die Wirkung des Phenylhydrazine auf den Organismus, *Ztschr. f. physiol. Chem.* **9**: 34-39, 1885.

12. Bodansky, Meyer; Marr, W. L., and Brindley, Paul: An Experimental Study of the Action of Phenylhydrazine Hydrochloride and Acetylphenylhydrazine (Pyrodon), with Reference to the Use of These Compounds in Polycythemia, *Am. J. Clin. Path.* **2**: 391-401 (Sept.) 1932.

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

From the Departments of Medicine and Neurology of the University of Texas School of Medicine, and the Laboratories of the John Sealy Hospital.

1. Cole, N. B.: Comments on a Case of Polycythemia Rubra Vera with Autopsy, *M. Clin. North America* **16**: 1255 (March) 1933.

2. Bodansky, Meyer: The Action of Hydrazine and Some of Its Derivatives in Producing Liver Injury, as Measured by the Effect on Lethal Tolerance, *J. Biol. Chem.* **58**: 799-811 (Jan.) 1924; The Effect of Compounds Related to Hydrazine in Producing Anhydria and Experimental Anemia, *J. Pharmacol. & Exper. Therap.* **23**: 127-133 (March) 1924.

3. Brown, G. E., and Giffen, H. Z.: The Treatment of Polycythemia Vera (Erythremia) with Phenylhydrazine, *Arch. Int. Med.* **38**: 321-345 (Sept.) 1926.

4. Minot, G. R., in Cecil, R. L.: A Textbook of Medicine, ed. 1, Philadelphia, W. B. Saunders Company, 1929, p. 965.

5. Minot in Cecil,⁴ ed. 2, 1930, p. 1009.

6. Bassett, S. H.; Killip, Thomas, and McCann, W. S.: Mineral Metabolism During Treatment of a Case of Polycythemia Vera, *J. Clin. Investigation* **10**: 771-785 (Oct.) 1931.

only temporary relief as regards the patient's sensation of "fulness in the head." From March 31 until April 7, the patient received 0.1 Gm. of phenylhydrazine hydrochloride daily. This was discontinued because of severe nausea and epigastric discomfort. Treatment with phenylhydrazine hydrochloride was resumed, May 6 (average of 0.3 Gm. weekly), and for several months the red blood cell count was maintained

superficial blood vessels over the malar eminences and the nose, an enlarged spleen palpable just below the costal margin, and vascular hypertension. The blood pressure was 180 systolic, 120 diastolic. The blood count was: red blood cells, 6,700,000; hemoglobin, 124 per cent; white blood cells, 7,650, with a normal differential count.

She was started on a course of acetylphenylhydrazine treatment, 0.1 Gm. daily for ten days, at the end of which time the red count was 5,950,000 and the hemoglobin 115 per cent. No treatment was given for ten days, during which time the red blood count remained unchanged. Another course of acetylphenylhydrazine in 0.1 Gm. doses was prescribed. The patient was not seen during this period of treatment, and when she reappeared on its completion her color had changed to a sallow yellow, the red blood cell count was 2,030,000, the hemoglobin was 40 per cent, and the urine was very dark. There was no evidence at this time of injury of either the kidney or the liver. When the drug was discontinued there was rapid blood regeneration, so that within a month the red count was 4,950,000 and the hemoglobin 90 per cent. The patient was then given 0.1 Gm. of acetylphenylhydrazine weekly. Frequent blood counts taken during the succeeding months showed that the red count was being maintained at approximately the normal level. Occasional moderate rises above normal have occurred, at which times the interval between doses has been shortened from seven to five days (chart 2). Under this plan of treatment it has been possible to maintain the normal erythrocyte count, and the symptoms originally complained of have largely subsided, excepting some awkwardness in the use of her feet and legs. The blood pressure has dropped to an average of about 150 systolic, 90 diastolic. Analysis of the blood shows a slight retention of nitrogenous constituents: nonprotein nitrogen, 40 to 44 mg.; urea, 22 to 24 mg. The uric acid is characteristically somewhat high, 4.7 mg. Other values are essentially normal: serum protein, 7.38 Gm.; serum calcium, 11.4 mg.; blood creatinine, 1.5 mg.; blood sugar, 103 mg.

The leukocyte count, which was normal when the patient was first observed, now shows an intermittent tendency toward an elevation of the total count (not exceeding 13,000), with a constant relative increase in the polymorphonuclear neutrophils, from 90 to 94 per cent, and the presence of occasional myelocytes. This is not regarded as a result of the treatment but rather a manifestation of the disease.

COMMENT

In case 1, treatment with phenylhydrazine hydrochloride was accompanied by definite toxic symptoms,

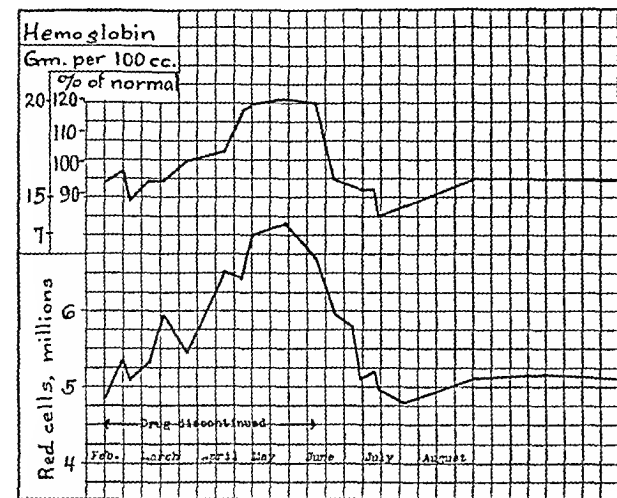


Chart 1 (case 1).—Prompt return of the blood to the polycythemic status when treatment is discontinued.

below 5,000,000. The patient, nevertheless, continued to complain of weakness and nausea and was unable to resume work. Treatment with acetylphenylhydrazine was begun, September 8, and has been continued ever since. This drug was easily tolerated and produced none of the unpleasant gastro-intestinal symptoms characteristic of phenylhydrazine hydrochloride. Within a few weeks the patient returned to work and has continued his occupation without interruption. It was found that the red blood cell count could be maintained at normal by the administration of from 0.1 to 0.3 Gm. weekly. At present, the patient takes 0.1 Gm. every week or two. After the polycythemia was controlled he was given antisyphilitic treatment, and at present the Wassermann reaction is negative. As far as could be ascertained, this treatment did not affect the erythrocyte count in any way.

As a test of the therapeutic effectiveness of the acetylphenylhydrazine, the drug was discontinued after February, 1931. As shown in chart 1 the red blood cell count, which was 4,850,000, February 10, rose to 7,000,000 on April 30. It remained at this high level \pm 500,000 until June 5. The hemoglobin showed a corresponding increase. Even with a rising red blood cell count the patient did not complain of symptoms until the onset of warm weather in May, and it was thought advisable to terminate the experiment on June 5. During the winter of 1932 an attempt was made to repeat the experiment, but owing to the advent of unusually warm weather early in the spring it had to be interrupted, and the treatment with acetylphenylhydrazine was resumed. During both of these experiments the patient was not informed of the laboratory observations.

At present he is symptom free, the red blood cell count is maintained within normal limits, and the laboratory data referable to renal and hepatic function are negative. Blood chemistry shows: nonprotein nitrogen, 35.3 mg.; urea, 22 mg.; uric acid, 4.6 mg.; creatinine, 1.35 mg.; calcium, 10.8 mg.; serum protein, 7.2 Gm. per hundred cubic centimeters.

CASE 2.—Miss M. G., aged 54, a librarian, came under observation Feb. 20, 1929, because she had noted a high color of the skin and because her dentist had advised an examination on account of the dark red color of her gums. She also complained of an unusual sensation in the legs, which was described as a combination of weakness and a "feeling as if the circulation was not good."

Positive observations made on physical examination included a dark reddish hue to the skin and mucous membranes, dilated

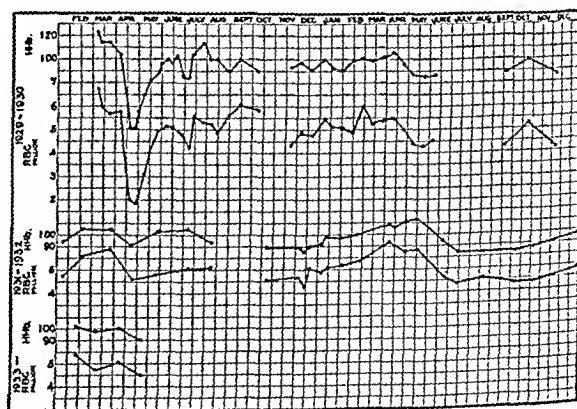


Chart 2 (case 2).—Effect of treatment with acetylphenylhydrazine since 1929. Gaps in the chart indicate periods when the patient was not under observation.

chiefly referable to the gastro-intestinal tract, even before the red blood cell count showed any marked reduction. Seven years of treatment with acetylphenylhydrazine has conclusively demonstrated its effectiveness in the treatment of polycythemia vera, the relative lack of toxicity and the absence of disagreeable accompanying symptoms.

Patient 2 was inadvertently overdosed. It should be noted that the toxic symptoms which characterize poisoning with phenylhydrazine were practically absent in this case of severe intoxication with acetylphenylhydrazine. We believe that there is sufficient evidence in the literature to justify the assumption that if a similar error in dosage and treatment had been made with phenylhydrazine hydrochloride the results might have been more serious. The subsequent course of this case reemphasizes the satisfactory results and ease of treatment experienced over a longer period in the preceding case.

DOSAGE

In beginning treatment with acetylphenylhydrazine, 0.1 Gm. may be given daily (by mouth in a gelatin capsule) over a period of from seven to ten days, during which time the red cell count should be closely observed. Regardless of the effect of this preliminary treatment on the erythrocyte count, the drug should be discontinued for at least two weeks, because of its apparent cumulative and delayed effects. After this interval, depending on circumstances, considerable individualization in treatment becomes necessary. It may require a second course of 0.1 Gm. doses daily for a few days to a week to reduce the red cell count to a nearly normal level. When this point has been reached, treatment should again be discontinued for from seven to ten days, after which it becomes necessary to determine the maintenance dose to be given at stated intervals. While, in our cases, 0.1 Gm. of acetylphenylhydrazine at intervals of from five to seven days was found sufficient, it should be pointed out that there are individual variations and that even in a given individual the maintenance dose may vary somewhat from time to time. Provided the red blood cell count is maintained at the normal level and the patient is symptom free, it is obviously desirable to give the smallest possible maintenance dose, consistent with these objectives, in order to avoid unnecessary destruction of erythrocytes and a consequent undue stimulation of the bone marrow.

Within certain limits the symptoms in polycythemia are not solely dependent on the level of the red blood cell count, since many of the cerebral manifestations, as well as those in the extremities, result from peripheral vascular stasis. Moderate elevation in the red blood cell count may be comfortably tolerated in cool weather; whereas in warm weather it may be associated with severe symptoms. This does not imply that a higher cell count should be permitted in moderate as compared with warm weather. In fact, our experience locally indicates that the greatest freedom from symptoms obtains when the red blood cell count is consistently maintained at a normal level throughout the year.

Frequent reference is to be found in the literature to the development of a tolerance to phenylhydrazine, and that a constantly increasing dosage may be required to produce the desired effect. According to a recent statement, this has not been Stealy's¹³ experience, although it is pointed out by this observer that at times his patient showed a temporary tolerance to the drug. Our observations are essentially similar to those of Stealy. Experimental studies described elsewhere¹² have led us to the conclusion that the increased tolerance is only apparent; it is not a property acquired by the organism but is inherent in the erythrocytes. Newly formed and immature red blood corpuscles contain a larger proportion of nonhemoglobin protein, and per-

haps because of this difference in chemical composition these cells seem to be more resistant than more mature corpuscles to the action of both phenylhydrazine and acetylphenylhydrazine. If sufficient intervals are allowed between administrations of the drug, successive doses produce approximately the same effect.

CONCLUSIONS

The experience in two cases of polycythemia vera, treated with acetylphenylhydrazine over periods of seven and four and a half years, respectively, supports the view that as a therapeutic agent this compound is superior to phenylhydrazine hydrochloride. As compared with the latter, the acetyl derivative is less toxic, the dosage is more easily regulated, and it provides a greater margin of safety in cases of overdosage or in the event that the cumulative and delayed effects become pronounced.

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ABSTRACT OF DISCUSSION

DR. MOSES BARRON, Minneapolis: In the treatment of polycythemia vera, one treats symptoms and not the disease. Polycythemia can be divided into a relative and an absolute one: a relative, from concentration of the blood as from vomiting, diarrhea or excessive perspiration. Such a polycythemia must not be treated with phenylhydrazine. In the absolute form there are two conditions, designated as erythrocytosis and erythremia. In the former there is an increase in the red blood cells secondary to some cause. Such conditions may be associated with oxygen deficiency, as in high altitudes or chronic bronchitis; with sluggish circulation, as in mitral disease; with congenital pulmonary stenosis; with defective hemoglobin, as in cases of poisoning from carbon monoxide, and sometimes with hypertension. Only the true polycythemia or erythremia, which is similar to leukemia for the leukocytes, has to be considered here. It is important to remember that the essential characteristic of this disease is a marked increase in the blood volume. This increase is produced not by increase in the plasma but by an increase in the number of red blood cells. Therefore the destruction of some of these cells reduces the blood volume. Some of the symptoms are due to the sluggish circulation resulting from the increased viscosity of the blood. Likewise an attempt is made to reduce the increased viscosity by destroying red blood cells. Theoretically the treatment with x-rays should be efficient, but it has proved ineffective. Cerebral, mesenteric and coronary thrombosis frequently develops in these cases; sometimes also hemorrhages. Thromboses may be induced by too rapid destruction of the red blood cells. One must therefore be careful not to produce too active or too rapid destruction of the erythrocytes. The authors suggested the use of acetylphenylhydrazine instead of the usual phenylhydrazine. At the Minnesota General Hospital, we find phenylhydrazine fairly reliable. Splenectomy has been used, and favorable results have been reported from the Mayo Clinic. Phenylhydrazine has been reported in the literature to be quite efficient in a large percentage of cases.

DR. NATHAN ROSENTHAL, New York: Prior to the introduction of phenylhydrazine compounds, treatment showed results which were not satisfactory, although improvements in symptoms and reduction of hemoglobin and red cells could be induced by x-rays, by blood letting or by a combination of the two. Occasionally spontaneous remissions occurred, but usually the condition was one of years of misery ended by fatal cerebral thrombosis, anemia or leukemia. Phenylhydrazine hydrochloride is without doubt a potent but toxic drug. The authors should be congratulated on their recommendation of acetylphenylhydrazine. This is based on their admirable work in proving, first, its superiority in animal experiments and, secondly, its efficacy in clinical observations. Since the important publications of Bodansky and his co-workers on the experimental studies of acetylphenylhydrazine, I have treated six cases of polycythemia vera with this drug. The dosage was similar, namely, 100 mg. given daily until a reduction in hemoglobin and red cells was found and headache and dizziness began to subside. In two

13. Stealy, C. L.: Polycythemia Vera, J. A. M. A. 98:1714-1716 (May 14) 1932.

patients with a hemoglobin of more than 140 per cent and about 10,000,000 red cells, 100 mg. had to be given daily over a period of from three to five weeks before symptomatic and hematologic improvements were noted. Acetylphenylhydrazine was given to three patients who had previously received phenylhydrazine hydrochloride. The results were better from the acetylphenylhydrazine with respect to the symptoms. The maintenance dosage varied from 100 to 400 mg. weekly. The treatment of other forms of polycythemia vera is somewhat different. In the leukemoid group both acetylphenylhydrazine and especially x-rays should be used. The treatment of thrombocytic polycythemia is not satisfactory. These patients have a tendency to develop a thrombosis following phenylhydrazine hydrochloride. This was noticed particularly in one patient, who developed, after administration of phenylhydrazine hydrochloride, splenic infarcts, mesenteric thrombosis, thrombosis of the lower end of the aorta, and frequent attacks of thrombophlebitis of the lower extremities. This patient also developed a severe anemia. He gradually improved until he was able to get about but constantly complained of marked weakness and paresthesias in the lower extremities. As the hemoglobin and red cells began to increase rapidly and dizziness returned, the patient was treated with x-rays without much effect. He was then given acetylphenylhydrazine, from which he developed a small thrombosis in one leg so that the medication had to be discontinued.

DR. C. T. STONE, Galveston, Texas: I should like to emphasize the remark of Dr. Barron, that in this discussion only polycythemia vera and not the secondary forms is being considered. We feel that acetylphenylhydrazine, and also the other methods of treatment employed at present, are purely symptomatic. They destroy the red cells and thereby reduce the blood volume and blood viscosity. There should be no misconceptions on that point. We do believe, however, from the collective experience in the literature, that a phenylhydrazine compound is the most efficient agent in accomplishing this purpose that is at present available, and we feel that the safety of acetylphenylhydrazine over any of the other derivatives so far studied is so much greater that it should replace phenylhydrazine hydrochloride in therapy. It is gratifying to learn that Dr. Rosenthal, with his larger experience in the use of acetylphenylhydrazine, has had essentially the same results.

TREATMENT OF NEUROSYPHILIS WITH MALARIA

OBSERVATIONS ON NINE HUNDRED AND EIGHTY-
FOUR CASES IN THE LAST NINE YEARS

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This report is a summary of our observations on the results of treatment with malaria of a group of 984 neurosyphilitic patients between May, 1924, and May, 1932. At no time since we inoculated the first patient with *Plasmodium vivax* have we been without an active case of inoculation malaria. During our early experience with this treatment, only those patients presenting clinical and serologic evidence of dementia paralytica were inoculated, but after a year's experience one of us (P. A. O'L.) felt that it might be of value in the prevention of dementia paralytica. The main theme in this report, therefore, will be the results from the treatment with malaria of some of the various forms of neurosyphilis other than dementia paralytica.

The successful results from the treatment of dementia paralytica with malaria have been repeatedly empha-

sized in the literature of this country and Europe. Besides the successful results, there are certain other advantages from the treatment which are worthy of emphasis. In certain cases only from fourteen to seventeen days of hospitalization have been necessary. This is a significant item when compared with a two year course of treatment by intravenous and intramuscular injection of antisyphilitic drugs. It is unfortunate that all patients have not been so amenable to treatment by inoculation; in certain cases it is necessary to give a considerable number of injections of arsenical preparations and bismuth or mercury, subsequent to the course of malaria. In the treatment of certain types of neurosyphilis, the superiority of treatment with malaria, as compared to that with preparations of arsenic and other metals, has been repeatedly emphasized; this has been noted particularly in the cases of predementia paralytica in which intensive courses of arsphenamine, bismuth, mercury and tryparsamide were given without satisfactory serologic control until treatment with malaria was instituted. It must not be forgotten that the recently developed electrical contrivances for inducing fever were the outgrowth of the results obtained from malarial treatment, and are expressions of an effort to stimulate the defensive mechanism against syphilis in a simpler and more controllable manner. It is also our belief that the consideration now given by syphilotherapeutists to the adoption of means and measures of stimulating the patient's resistance to syphilis rather than endeavoring to overwhelm *Spirochaeta pallida* by intensive intravenous and intramuscular medication is one of the foremost accomplishments of treatment with malaria.

On the other hand, there are certain disadvantages in treatment with malaria which have prevented the method from becoming used as a routine in cases of neurosyphilis. The fact that it was impossible to induce chills and fever in 10 per cent of the patients inoculated, owing to their immunity to malaria, places certain limitations on the method. The need not only for hospitalization but for a hospital personnel trained in the care of these patients may be considered by opponents of the method as a definite objection to its general use. Likewise cases must be selected, in the sense that in the case of a debilitated syphilitic patient, or in the presence of advanced disease of any of the vital viscera, the therapeutic use of fever is contraindicated. The morbidity and the mortality rates have also been considered contraindications; however, we now believe that death during treatment with malaria should occur rarely, and only as the result of some accident. In our first 100 cases in which this treatment was given, the mortality rate was 5 per cent, whereas in the last four years it was 0.57 per cent. Of the total number of patients treated, 2.4 per cent have died as a direct or indirect result of the treatment. In a consideration of the disadvantages of treatment with malaria it should be noted that occasionally a patient with dementia paralytica is made worse by the treatment; in this series the clinical symptoms were accentuated in 2.2 per cent of the cases in which dementia paralytica, according to clinical evidence, was present.

DEMENCIA PARALYTICA

Appraisal of the results of treatment with malaria of patients suffering from dementia paralytica was based on the clinical status of the patient at least one year after the course had been given. If patients were treated in an asylum a remission was interpreted as

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evidence of sufficient improvement to warrant paroling of the patient. Of the 186 cases (table) in which advanced clinical signs of dementia paralytica were sufficient to warrant institutional care, a complete remission developed in 35 per cent, and in 35 per cent patients were sufficiently benefited to be permitted to go to their homes. Another group of patients with dementia paralytica included those who did not give sufficient clinical evidence of dementia paralytica to indicate that the condition had progressed far enough to warrant their incarceration in an asylum for the insane; nevertheless a clinical diagnosis of dementia paralytica was justifiable. The criteria of the results of treatment were based on the ability of the patient to return to work of some type, not necessarily the former occupation, but any occupation with which he could support himself and his family. There were 249 patients in this group, 46 per cent of whom returned to work, and the condition of 35 per cent was decidedly improved following treatment with malaria. In 42 per cent of the cases in which the spinal fluid was reexamined recently, the tests were found to be reversed to complete negativity in all respects.

A small number of patients in the group with dementia paralytica were listed as having been improved, in whom the clinical progress of the disease had been arrested, as evidenced by the stationary clinical status and the negative serologic tests. The personality of these patients was changed, as manifested by their inability to retain employment permanently and by their lack of initiative and sense of responsibility. If such patients were observed over a period of several years, the clinical picture of slow but progressive mental deterioration was noted. The course of this progressive degeneration was not altered by the liberal use of various antisyphilitic remedies. On the other hand, in the group of patients with early dementia paralytica treated successfully, twenty-six (10.4 per cent) apparently were "cured" in the sense that tests applied to the spinal fluid and blood serum remained negative, and the mental status remained within the range of normal from five to eight years after treatment. It is our practice either to treat all patients suffering from dementia paralytica with trypanamide and bismuth, or to give a combined intraspinal course of treatment with arsphenamine and bismuth or mercury, shortly after the course of malaria. Clinical relapse was observed in 2.6 per cent of these patients.

DEMENTIA PARALYTICA SINE PARESI

The results in cases of asymptomatic dementia paralytica, or dementia paralytica sine paresi, have been highly satisfactory. Included in this group are the cases in which the disease had not progressed far enough to permit of a clinical diagnosis of dementia paralytica but in which tests of the spinal fluid had been characteristic of dementia paralytica and had failed to show satisfactory response following antisyphilitic treatment. We also included in this group cases in which serologic reactions were of the so-called chronic relapsing type; that is, serologic reactions considered characteristic of dementia paralytica became negative while the patient was under treatment, only to become positive again immediately when treatment was discontinued. In practically all of these cases intensive treatment had been given with the arsphenamines, trypanamide, mercury, bismuth and iodides, and also intraspinal treatment had been carried out before inoculation with *Plasmodium vivax*.

Following the course of malaria, three fourths of the patients manifested decided clinical improvement, and the serologic tests of the spinal fluid of half of them became completely reversed to negative. In our early experience, it was this type of case particularly that called our attention to the value of malarial treatment as a preventive of dementia paralytica. Accordingly, for the past seven years, if a patient's spinal fluid gave persistently positive serologic tests, if the patient gave evidence of potential dementia paralytica, and if it was demonstrated that routine measures of treatment failed to reverse the serologic tests, it has been our recommendation and practice to give malarial treatment. We have had eighty-five such cases, and it is worthy of comment that we have had no reversions to positive of serologic tests among patients whose spinal fluid, after malarial treatment, has given negative tests.

TABETIC FORM OF DEMENTIA PARALYTICA

There were sixty-five cases of the tabetic form of dementia paralytica. The therapeutic results, although satisfactory, were less striking than in the other forms of parenchymatous neurosyphilis. As in the groups

Results of Malarial Treatment

| Diagnosis | Cases | Clinical Results, per Cent | | Serologic Results, per Cent | |
|---|---------|----------------------------|------|-----------------------------|------|
| | | Excellent | Fair | Excellent | Fair |
| Advanced dementia paralytica*..... | 186 | 35 | 35 | .. | .. |
| Early dementia paralytica..... | 249 | 46 | 35 | 42 | 45 |
| Asymptomatic dementia paralytica (dementia paralytica sine paresi)..... | 65 | 78 | .. | 49 | 43 |
| Tabetic form of dementia paralytica..... | 65 | 53 | 39 | 24 | 71 |
| Tabes dorsalis with positive tests of spinal fluid..... | 116 | 42 | 41 | 43 | 27 |
| Gastric crises with negative tests of spinal fluid..... | 25 | 81 | 56 | .. | .. |
| Lightning pains with negative tests of spinal fluid..... | 12 | 11 | 22 | .. | .. |
| Optic atrophy..... | 48 | 14 | 22 | .. | .. |
| Asymptomatic neurosyphilis..... | 74 | .. | .. | 42 | 37 |
| Congenital neurosyphilis, all types..... | 17 | 8 | 66 | 25 | 75 |
| Miscellaneous types of neurosyphilis..... | 12 | 23 | 71 | .. | .. |
| Aborted or immune to malaria..... | 95 | .. | .. | .. | .. |
| | (10.8%) | | | | |

* These patients were treated at the Rochester State Hospital under the direction of Drs. A. F. Kilbourne and Oscar C. Heyerdale.

already considered, most of the patients were intensively treated with antisyphilitic measures before institution of the course of malaria. In 55 per cent of cases the progress of the disease was arrested to the extent that the patient could be classified as having a complete remission or as having made decided general improvement, whereas in an additional 39 per cent the patients were improved and remained capable of working at an occupation of one sort or another. None of the objective signs of the disease, such as Argyll Robertson pupils and absent knee jerks, was influenced; therefore, clinical appraisal in this group was based on the improvement in the somatic symptoms only. The proportion of reversal of serologic tests to negative among these patients was considerably less than in the two groups previously considered. In only 24 per cent were all tests of spinal fluid completely changed to negative, whereas in 71 per cent all but one of them became negative. In this latter group, the Kolmer modification of the Wassermann test was the one which continued to remain positive, while the cell count, globulin test and colloidal benzoin test became negative.

TABES DORSALIS

The patients classified as having tabes dorsalis were divided into four groups: (1) frankly tabetic patients,

with positive reactions of the spinal fluid; (2) tabetic patients with gastric crises and negative serologic tests; (3) tabetic patients with negative reactions of the spinal fluid and persistent, intractable lightning pains, and (4) patients with primary optic atrophy as a complication of *tabes dorsalis*.

Frankly Tabetic Patients with Positive Reactions of the Spinal Fluid.—It had been our earliest impression that the results in the treatment of *tabes dorsalis* by malaria were less favorable than in the treatment of *dementia paralytica*. Study of a larger series of cases has not substantiated this impression because we now find that of the 116 tabetic patients, 42 per cent were decidedly improved and 41 per cent were benefited by malarial treatment. These more satisfactory results are no doubt due, in great measure, to our efforts to give the tabetic patient the advantage of treatment with malaria earlier in the course of his disease. Considerable caution must be exercised in the malarial treatment of the patient with pronounced involvement of the lower part of the spinal cord. In two instances, rapidly progressing ataxia has terminated in paraplegia, owing to the development of myelitis during the course of malaria. Gain in weight, decrease in frequency and severity of the attacks or complete disappearance of the neuritic pains in the legs, return of libido and potentia, amelioration of gastric crises and improvement in symptoms referable to the urinary bladder have been among the benefits derived from malarial treatment. In 43 per cent of cases in this group, the reversal to negative of all serologic tests of the spinal fluid was complete.

Tabetic Patients with Gastric Crises and Negative Serologic Tests.—Among less than half of the patients with early signs of *tabes dorsalis* complicated by gastric crisis, were the results of antisyphilitic treatment successful. Those patients who derived the most benefit from routine treatment with pharmaceutical preparations as a rule gave histories of having had the episodes of crisis for a year or less, and gave manifest evidence of actively positive spinal fluid, as indicated particularly by a high cell count. The spinal fluid of many patients who derive no relief from the crises will become completely negative. It has been our experience that the patients of the latter group receive little if any good from the continued use of arsphenamine and bismuth or mercury. It is not uncommon that because of the severity of the attacks these patients readily become habitués of morphine, which adds another serious complication to their difficulties.

We have used malarial treatment in an effort to control the crises of *tabes* when the usual methods of treatment have failed. There were twenty-five patients in this series whose spinal fluid had become negative while under treatment with antisyphilitic measures, but whose gastric crises persisted. In 31 per cent, these crises almost completely disappeared after malarial treatment, whereas in 56 per cent the interval between attacks was greatly increased and the severity of the spells lessened. For example, attacks which usually lasted from three to five days were limited to four to eight hours and were more readily controlled with opiates than before treatment. The use of tryparsamide and a bismuth preparation following malarial treatment has been of material value to these patients.

Tabetic Patients with Negative Reactions of the Spinal Fluid and Persistent Intractable Lightning Pains.—This division of tabetic patients was composed of those whose spinal fluid and blood serum became

negative to test, either spontaneously or as the result of treatment, but whose "lightning pains" persisted. Continued, intensive use of the arsphenamines or other metallic medicaments offered but slight relief from the attacks of pain of these patients. As the result of long observation of twelve patients following malarial treatment we found that only 11 per cent were entirely relieved, whereas 22 per cent were benefited.

Patients with Primary Optic Atrophy as a Complication of Tabes Dorsalis.—The tabetic patients included in this group were those with the resistant complication of primary optic atrophy. It is generally accepted that intensive therapeutic measures arrest the progress of the optic atrophy in but few cases, and that occasionally the too enthusiastic use of arsenical preparations has resulted in more rapid loss of vision. We have seen an occasional case in which combined intraspinal treatment has apparently halted the failure of vision. In view of the resistance to treatment of patients with primary optic atrophy, and of the fact that other manifestations of neurosyphilis often require intensive treatment, we have used malarial therapy in conjunction with a variety of other types of treatment. Accordingly, appraisal of malarial treatment alone in relation to optic atrophy is impossible, because of the extensive additional treatment which these patients received. In only 14 per cent of the forty-eight cases in this group was the progressive loss of vision halted even temporarily, whereas in 22 per cent the process was slowed. In the majority of cases of bilateral hemianopia, temporary decrease in the visual fields was usually noted following malarial treatment, whereas in two cases in which there was rapidly progressive loss of vision complete blindness developed during the course of the treatment. Improvement in the other symptoms of *tabes dorsalis* was, as a rule, marked, even though there was a gradual but steady decrease in vision.

ASYMPTOMATIC NEUROSYPHILIS

Included under this heading were those cases in which the reaction of the spinal fluid was positive but in which the symptoms and signs were insufficient to permit of a diagnosis of neurosyphilis. These seventy-four patients were also treated with malaria after they had received intensive treatment with arsphenamine, mercury or bismuth, and large doses of potassium iodide as well as intraspinal treatments. Many of them had received fifty or more injections of arsphenamine or one of its modifications, with corresponding amounts of mercury or bismuth. It has been our purpose to give patients with this type of neurosyphilis the benefit of the routine measures of treatment before subjecting them to malarial therapy, because we believe that the majority of them will respond satisfactorily to intensive intravenous and intramuscular treatment. Our knowledge of the mechanism by which malarial treatment accomplished its results is meager, and for the present the concept that it "stimulates the patient's defense mechanism" continues to be the accepted explanation. This effect has been particularly emphasized among patients with asymptomatic neurosyphilis who had received intensive antisyphilitic treatment without favorable influence on the serologic tests but whose spinal fluid, following a course of malarial treatment, underwent rapid and permanent reversal to negativity. In 42 per cent of these seventy-four cases the spinal fluid became negative after malarial therapy, while in an additional 37 per cent the serologic evidence was

duced to a negative globulin test and cell count, and the Wassermann test remained positive. The results of this group of cases were by far the most satisfactory of those in any of the various types of neurosyphilis that we have treated. The serologic reversal, as a rule, appeared approximately one year after the course of malaria, and of particular significance is the fact that serologic relapses have been observed to date. It is hoped that longer observation of a larger series of cases will substantiate the outstanding value of malarial treatment in this type of neurosyphilis.

CONGENITAL NEUROSYPHILIS

The results from treatment with malaria of seventeen patients with congenital neurosyphilis were discouraging. Congenital cases of dementia paralytica, the tabetic form of dementia paralytica, tabes dorsalis, gastric crisis and optic atrophy were included in this group, and although certain patients derived systemic benefit, the results were far less beneficial than those noted in corresponding types of acquired neurosyphilis.

A MISCELLANEOUS GROUP OF CASES

This group included twelve cases with the following conditions: vascular neurosyphilis, meningovascular neurosyphilis, the syndrome of multiple sclerosis, meningomyelitis and meningo-encephalitis. The results following malarial treatment were discouraging, although no significant ill effects were noted. The amount of improvement was not enough to justify use of the method as a regular therapeutic measure in these uncommon types of neurosyphilis.

Severe neurorecurrences, manifested by syphilitic meningitis with high pleocytosis and clinical evidence of severe chronic meningitis, developed in three cases of acute syphilis following the inadequate use of the arsphenamines. The results from malarial treatment in these three cases were not encouraging; therefore the patients were given antisyphilitic treatment, and the results were highly satisfactory. It is significant that these three patients each had received only a few injections of neoarsphenamine at the time of their acute syphilis.

SUMMARY

Observation of almost 1,000 patients with neurosyphilis who were treated with malaria between May, 1924, and May, 1932, demonstrated that although slightly less than half of the patients with early clinical dementia paralytica were able to hold employment following the treatment, the more significant observation is that in more than three fourths of the cases of asymptomatic dementia paralytica (dementia paralytica sine paresi), clinical progress of the disease was arrested. Equally significant is the fact that following malarial treatment the serologic tests of the spinal fluid became reversed to complete negativity in almost half of the cases of asymptomatic neurosyphilis in which routine measures of treatment had previously failed to have a favorable influence on the serologic characteristics. The results in the treatment of the tabetic form of dementia paralytica and tabes dorsalis were likewise favorable in about half the cases, whereas among serologically negative tabetic patients with resistant complications, the crises and pains in the legs have been only slightly benefited. The results with patients who had congenital neurosyphilis have been discouraging.

Accordingly, we believe that malarial treatment is warranted not only in the treatment of dementia para-

lytica but particularly in the treatment of patients with neurosyphilis who are not responding favorably to treatment with the so-called antisyphilitic remedies.

ABSTRACT OF DISCUSSION

DR. WALTER FREEMAN, Washington, D. C.: The authors mention a ten-year period for checking up these results. Possibly after ten years they will find, as I have done, that not a few of these patients succumb to syphilitic lesions of other organs, the heart, the liver and the aorta. I can report on some 200 patients with dementia paralytica that have been followed for a period of from five to ten years. I have divided them into three groups: those treated during the first year, during the intermediate stage of one to three years, and those over three years. Of those treated during the first year, 59 per cent were discharged. Of those inoculated after three years, only 9 per cent were discharged. Moreover, of those who were treated in the first year, 7 per cent are now dead, and of those not treated until three years after onset, 39 per cent are dead. These figures show the necessity for early treatment. It is rather to be expected that those with minimal injury will show the best results, and those with serious injury to the spinal cord, to the optic nerve, and to the nervous system generally, as in the congenital cases, will show the worst results. Some 10 per cent of the patients of Drs. O'Leary and Welsh did not take malaria, but this objection is being overcome. My associates and I have recently been using quartan malaria with approximately 95 per cent takes, even in Negroes. The short period of treatment in malaria as opposed to the necessarily prolonged intravenous or intramuscular therapy is also something in its favor, particularly in individuals who are a little confused, a little irritable, noncooperative, and who will not return for treatment. All one has to do is to inoculate them with malaria and tell them to go home, and in two or three weeks one may expect a hurry call. The serologic responses have been rather gratifying. Progressive improvement in spinal fluid reactions continues for as long as eight years after the inoculation of malaria. The first year there is relatively little change unless the arsenicals are pushed, in which case one may get serologic complete reversal rather rapidly. If treatment is omitted, the reactions come down anyhow, but somewhat more slowly. In those patients who still show strongly positive reactions after two years and who show no substantial improvement, the outlook is bad. Even reinoculation with malaria gives poor results. Possibly there is some change in the character of the disease process. The brains in such cases show very little inflammation but the typical endarteritis of the small cortical vessels. This is probably a slowly progressive degenerative manifestation of neurosyphilis without the flamboyant picture of dementia paralytica.

DR. PAUL A. O'LEARY, Rochester, Minn.: Malaria therapy has not only produced satisfactory clinical and serologic results in phases of syphilis that have been resistant to the so-called specific remedies but has stimulated syphilotherapists to seek other means of producing fever to accomplish similar results. My experience to date with these mechanical measures has led me to agree with Dr. Freeman that the results from malaria therapy are still superior to those obtained from the electrical machines. The concept that it is the fever per se which produces the therapeutic results is tenable but is as yet not proved.

Anemia and the Hemoglobin.—My second axiom is that symptoms of anemia rarely appear until the hemoglobin has fallen below 75 per cent. There are certain exceptions to this axiom, more especially in pernicious anemia, where glossitis and nervous changes may appear with a hemoglobin percentage little below the normal. It is nevertheless a good general rule, and if a patient has a hemoglobin of 75 per cent or over, it is unlikely that weakness or dyspnea is the result of anemia. On the other hand, if the hemoglobin is below 75 per cent, the patient is truly suffering from anemia, and the next step is to decide the exact nature of the anemia. It is a short-sighted policy to begin treatment without further investigation.—Witts, L. J.: Anemia in General Practice, *Brit. M. J.* 1:1091 (June 24) 1933.

TEN YEARS' OBSERVATION OF CHILDREN WITH RHEUMATIC HEART DISEASE

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From June 1922 to January 1932, at the Children's Heart Hospital in Philadelphia, we have cared for 458 children threatened with or suffering from rheumatic fever and its accompanying cardiovascular damage. In 1925, a summary of our results with 225 children seemed to warrant a continuance of our institution¹ and we reported the reasons for our belief in "the importance of prolonged convalescent care in rheumatic heart disease."² We received especial comfort at that time from the following statement by Swift:³ "A few heart hospitals where proper study of these problems could both intensively and extensively be carried out would do much toward formulating a definite plan in the treatment of a condition which up to the present has been but little permanently benefited by the methods now in vogue." In 1930, we reported our results to date and outlined the requirements for admission and the routine treatment in our convalescent hospital.⁴ We have been stimulated in this work during the past ten years through the reference of children suffering with rheumatic heart disease by many physicians in private practice and by practically every hospital in Philadelphia and its suburbs—more than forty hospitals in all. We have been encouraged by the apparent improvement in the general physical condition of the majority of these children while at the hospital and by the statement of pediatricians working in the dispensaries of these hospitals that the parents of the children returning to the clinics from the Children's Heart Hospital seem to understand the problem of combating heart disease in a much more thorough manner than do the parents of children referred from the wards of these hospitals directly to the clinics.

More recently it was realized that rheumatic fever is perhaps a streptococcic reaction in hypersensitive individuals; the apparent minimal incidence of streptococcic infections in tropical climates and the somewhat encouraging results with children suffering from rheumatic heart disease and transferred to southern Florida⁵ has brought forward the problem as to whether we were justified in maintaining a fifty-bed convalescent hospital at a cost of \$33,000 a year or whether we should use

this money to support rheumatic children in tropical climates until past the age of puberty, at which age there is suggestive evidence that "the tendency to rheumatic infection begins to diminish."⁶ Longcope⁷ has concluded that "the available statistics concerning the geographical distribution of rheumatic fever indicate that the disease is very rare or almost unknown in the tropics and much less commonly observed in the warm portions of the midtemperate zones than in the cooler portions."

Our present study of the condition of the 458 children cared for at our hospital during a ten year period with a more intensive study of some 141 children in this group, selected because of the more complete data available in their case histories, may help to answer the query and at the same time offer a small contribution of additional information concerning rheumatic fever in children as it has existed in Philadelphia during the past ten years. The case histories of the smaller group were made available through the cooperation of the Pennsylvania, Children's, St. Christopher's, Graduate, University, Mount Sinai and Bryn Mawr hospitals.

As suggested by Paul's⁸ review of the epidemiology of rheumatic fever, we have attempted to study the racial factor; the familial incidence; the age of primary manifestation; the seasonal incidence of primary manifestation and reactivations; the part of the city in which the home is located at the time of primary manifestation and reactivations with the character of the subsoil; the amount of dampness; the social conditions; the effect of malnutrition and defective diets; the incidence of tonsillitis and the results of tonsillectomy; the length

TABLE 1.—Children Discharged from Children's Heart Hospital Classified by Sex, Age and Ability to Work: 1922-1931, Inclusive

| Sex and Age at Time of Follow-Up | Total Children | School | Working | Ability to Work at Time of Follow-Up | | | | |
|----------------------------------|----------------|--------|---------|--------------------------------------|--------------------------------|--------------|-----------|-----------|
| | | | | Unable to Work* | Not Working for Other Rea-son† | In Hos-pital | De-ceased | No Record |
| Total children..... | 458 | 133 | 22 | 20 | 22 | 7 | 68 | 151 |
| | 100% | 30.1% | 4.8% | 4.4% | 4.8% | 1.5% | 21.4% | 32.9% |
| Boys..... | 221 | 70 | 6 | 10 | 12 | .. | 52 | 71 |
| | 100% | 31.2% | 2.7% | 4.5% | 5.4% | .. | 23.5% | 32.1% |
| Girls..... | 237 | 63 | 16 | 10 | 10 | 7 | 46 | 80 |
| | 100% | 26.5% | 6.8% | 4.2% | 4.2% | 2.9% | 19.4% | 33.3% |
| Under 10 yrs..... | 40 | 17 | .. | 4 | 2 | .. | .. | 15 |
| | 100% | 42.5% | .. | 10.0% | 5.0% | .. | .. | 37.5% |
| 10 to 14 yrs..... | 158 | 84 | .. | 8 | .. | 5 | .. | 61 |
| | 100% | 53.2% | .. | 5.1% | .. | 3.2% | .. | 38.6% |
| 15 yrs. and older.. | 162 | 37 | 22 | 8 | 20 | .. | .. | 75 |
| | 100% | 22.8% | 13.6% | 4.9% | 12.3% | .. | .. | 46.2% |

* Includes only those restricted by heart condition.

† Includes nineteen children who are unemployed, two who are too young for school and one who is disabled by other illness.

of stay at the Heart Hospital in relation to ability to work at the time of the follow-up; the interval between leaving our hospital and the next reactivation or rheumatic manifestation; the relationship of the primary manifestations and reactivations to illnesses such as "common colds," "sore throats" in other members of the family; the age at which signs of circulatory insufficiency develop; the number of children in whom pre-

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

The children were treated in the Children's Heart Hospital, financed by the Philadelphia Heart Association, the Welfare Federation and the Junior League of Philadelphia. The work of Drs. Stroud and Thorp was done in connection with the Robinette Foundation of the University of Pennsylvania.

1. Stroud, W. D., and McMillan, T. M.: Results in the Convalescent Care of Two Hundred and Twenty-Five Children Over a Period of Five Years, *Tr. Sec. Dis. Child.*, A. M. A., 1927, p. 214.

2. Lukens, F. D. W., and Stroud, W. D.: The Importance of Prolonged Convalescent Care in Rheumatic Heart Disease, *Atlantic M. J.* (Aug.) 1928.

3. Swift, H. F.: Rheumatic Fever, *Am. J. M. Sc.* 170: 631 (Nov.) 1925.

4. Stroud, W. D.: The Treatment of Rheumatic Cardiovascular Disease in Children, *M. Clin. North America* 13: 845-856 (Jan.) 1930.

5. Jones, T. D.: Personal communication to the authors.

6. Wilson, May G.; Lings, Claire, and Croxford, Geneva: *Statistical Studies Bearing on Problems in the Classification of Heart Disease*, *Am. Heart J.* 16: 196 (Dec.) 1928.

7. Longcope, W. T.: Variations in Manifestations of Rheumatic Fever in Relation to Climate, *Ann. Int. Med.* 4: 401-407 (Oct.) 1931.

8. Paul, J. R.: The Epidemiology of Rheumatic Fever: A Preliminary Report with Special Reference to Environmental Factors in Rheumatic Heart Disease and Recommendations for Future Investigations, the American Heart Association, 1930.

mature contractions develop and the age of incidence; the number in whom auricular fibrillation develops and their ages; the apparent cause of death in these children, that is, whether due to toxic effects, congestive failure or a combination of these two, and, finally, the prognostic significance of the number and type of damaged valves.

TABLE 2.—Ability to Work at Time of Follow-Up Compared with Length of Stay at Children's Heart Hospital

| Length of Stay | Ability to Work at Time of Follow-Up | | | | | | | |
|--------------------|--------------------------------------|--------|---------|-----------------|----------------|-------------|----------|-----------|
| | Total Children | School | Working | Unable to Work* | Other Reasons† | In Hospital | Deceased | No Record |
| Total..... | 438 | 138 | 22 | 20 | 22 | 7 | 98 | 151 |
| | 100% | 30.1% | 4.8% | 4.4% | 4.8% | 1.5% | 21.4% | 32.9% |
| Less than 2 mo.... | 124 | 13 | 7 | 5 | 7 | .. | 45 | 47 |
| | 100% | 10.4% | 5.6% | 4.0% | 5.6% | .. | 36.2% | 37.9% |
| 3 to 5 mo..... | 143 | 47 | 7 | 5 | 8 | 2 | 23 | 51 |
| | 100% | 32.9% | 4.8% | 3.3% | 5.6% | 1.3% | 16.1% | 35.7% |
| 6 to 8 mo..... | 142 | 60 | 6 | 6 | 6 | 4 | 18 | 42 |
| | 100% | 42.2% | 4.2% | 4.2% | 4.2% | 2.8% | 12.7% | 29.6% |
| 9 to 11 mo..... | 37 | 12 | 2 | 3 | 1 | .. | 8 | 10 |
| | 100% | 32.4% | 5.4% | 8.1% | 2.7% | 2.7% | 21.6% | 27.0% |
| 12 mo. or over.... | 12 | 6 | .. | 1 | .. | .. | 4 | 1 |
| | 100% | 50.0% | .. | 8.3% | .. | .. | 33.3% | 8.3% |

* Includes only those restricted by heart condition.

† Includes nineteen children who are unemployed, two who are too young for school and one who is disabled by other illness.

The only comparable studies extending over a period of ten years which we have been able to discover are those of Coombs⁹ and of Wilson and her associates.⁶ In the former, of 253 patients with undoubted cardiac infection in Bristol, England, 21.4 per cent had died ten years after the primary manifestation of rheumatic fever—a figure identical with ours. In the latter group of 395 patients, three fourths of whom suffered from undoubted cardiac infection, only 11.9 per cent had died in ten years. The latter group had the primary manifestation at the same average age as ours; that is, 7.3 years. This apparently much better result with only dispensary observation and care is discouraging when compared with that of our group, which, in addition, has had convalescent hospital treatment. It must be remembered, however, that in Wilson's⁶ group "the majority of children came from moderately well-to-do homes of the industrial laboring class," while the children in our group, in the vast majority of cases, came from the very poorest laboring class in Philadelphia. We must reluctantly admit, however, that the mortality in this disease, as reported to date, seems to be about the same, no matter what the treatment.

In considering the group of 124 children who stayed at the hospital less than two months, it must be remembered that it includes many children, overwhelmed by the infection, who never should have been sent from the hospital wards to a convalescent hospital, many of whom were returned to the city hospitals within a few weeks. The families of other children in this group failed to cooperate in the treatment. These two factors help to explain the high percentage of deaths in this group (36.2), and the high percentage in which our follow-up has been unsuccessful (37.9). The group that stayed longest at the hospital—twelve months or more—includes those children with a low grade infection but an apparent inability under the best of circumstances to arrest the disease even temporarily.

9. Coombs, C. F.: Rheumatic Heart Disease, New York, William Wood & Co., 1924.

THE RACIAL FACTOR

Unfortunately, the value of any conclusions that might be drawn from our figures as to the racial incidence in this disease is reduced by location of the hospitals from which these cases were drawn—near the centers of the Italian and Hebrew populations in Philadelphia—plus the racial characteristic among the Jewish families of availing themselves most promptly of the unusual advantages that our hospital offers. Yet it is interesting to note in other studies that rheumatic fever seems to have an especial predilection for these two racial strains.

Similar factors, such as racially characteristic diets and the usual location of the more recent immigrants from Italy, Poland, Russia and Ireland in the parts of Philadelphia in which hygienic conditions are not of the best and which supply the majority of dispensary and ward patients in the hospitals from which these children come, have prevented satisfactorily controlled conclusions as to the part insufficient or defective diets, dampness, subsoil and poor hygienic conditions may play in the development of rheumatic heart disease. Generally speaking, however, these children came from the lowest social strata of the poorest districts of Philadelphia. Most of the families were indigent, and these factors were probably contributing factors in the development and progress of the disease in our patients.

THE FAMILIAL INCIDENCE

Among the 141 children with the most complete histories, we find thirty-four families in which there were at least two cases of rheumatic heart disease, thirteen families in which there were at least three cases of rheumatic heart disease, and one family in which there were at least five cases of rheumatic heart disease. We believe that satisfactory information as to the familial incidence of this disease can be obtained only through clinical histories and complete physical examinations of every member of the families from which these children come; that is, through studies similar to that of St. Lawrence.¹⁰ Further, it is our firm conviction that it is the duty of every practicing physician to carry out this procedure in his practice and that a similar responsibility lies with every heart clinic and heart hospital treating rheumatic heart disease. In cases of tuberculosis, physicians, clinics and sanatoriums carry out routine physical examinations and roentgen studies on every member of the family of the patients treated,

TABLE 3.—Children Discharged from Children's Heart Hospital Classified by Chief Racial Groups

| Parentage | Total Children | | Deceased Children | |
|----------------------------------|----------------|----------|-------------------|----------|
| | Number | Per Cent | Number | Per Cent |
| Total of four racial groups..... | 124 | 100.0 | 41 | 100.0 |
| Italian..... | 46 | 37.1 | 13 | 31.7 |
| Hebrew..... | 36 | 29.0 | 14 | 34.2 |
| American..... | 29 | 23.4 | 11 | 26.8 |
| Irish..... | 13 | 10.5 | 3 | 7.3 |

and it seems only right that such family studies should be made in the campaign against rheumatic heart disease, since the latter disease appears to have at least as high a familial incidence as the former.

AGE OF PRIMARY MANIFESTATION

In considering the value of table 5 in prognosis, two facts must be kept in mind. Many primary manifesta-

10. St. Lawrence, William: The Family Association of Cardiac Disease, Acute Rheumatic Fever and Chorea: A Study of One Hundred Families, J. A. M. A. 79: 2051 (Dec. 16) 1922.

tions of rheumatic fever go unrecognized and the discovery of heart damage a number of years later may be erroneously considered the time of primary manifestation. In the second place, we have gained the impression that children subject to rheumatic fever appear to divide themselves into three general groups: one in which the primary manifestation seems to induce

TABLE 4.—*The Functional Classification of Patients with Heart Disease**

Organic Heart Disease:

Class I: Patients with organic heart disease, able to carry on ordinary physical activity without discomfort

Class II: Patients with organic heart disease, unable to carry on ordinary physical activity without discomfort

A. Activity slightly limited

B. Activity greatly limited

Class III: Patients with organic heart disease, and with symptoms or signs of heart failure, when at rest, unable to carry on any physical activity without discomfort

Class E—Possible Heart Disease:

Patients who show abnormal signs or symptoms referable to the heart but in whom the diagnosis of heart disease is uncertain

Class F—Potential Heart Disease:

Patients without circulatory disease whom it is advisable to follow because of the presence or history of an etiologic factor which might cause disease

* Bainton, J. H.; Munley, W. C.; Levy, R. L., and Pardee, H. E. B.: Criteria for the Classification and Diagnosis of Heart Disease, American Heart Association, 450 Seventh Avenue, New York, 1933.

relative immunity toward further reactivations, and thus the primary manifestation is the one and only manifestation of the disease except the resultant cardiovascular damage; a second group in which there appears to be no evidence of rheumatic activity between the reactivations, but reactivations may be frequent until the child succumbs to an especially virulent one or, between the ages of 12 and 16, appears to develop a relative immunity to the disease and is left with the resultant cardiovascular damage practically stationary; a third in which the resistance to the infection seems low and the child is overwhelmed by the infection and dies within one or two years or else runs a constant febrile course or at least maintains constant evidences of a low grade activity with a toxic death in from three to five years or the gradual development of an apparent immunity at or just after puberty. It is in the last group that intravenous vaccine seems to offer the greatest possibilities in treatment.

In the group reported by Coombs,⁹ the average age of primary manifestation was just under 10.2 years. Our figure more nearly simulates Paul's¹¹ of 7.0 years and Poynton's¹² of 7.0 years, and is identical with Wilson's¹⁴ figure in a series of 413 children; namely, 7.3 years.

SEASONAL INCIDENCE OF PRIMARY MANIFESTATION AND REACTIVATIONS

It is most important to ascertain the seasonal incidence of rheumatic fever in those parts of the country in which this disease is most prevalent. Coombs⁹ finds the incidence maximal in England during the months of December and January; Levine¹³ finds it maximal in Boston during February; we find it maximal in Philadelphia during March, and the observations of Swift

and Wilson¹⁴ suggest that it may be maximal in New York later in the spring.

It naturally follows that the presumed methods of preventing primary infections in children or adults of rheumatic families or of minimizing reactivations in those suffering with rheumatic heart disease should be stressed during the months of highest incidence in the localities in which these individuals live.

We were unable to secure accurate information as to the interval between leaving our hospital and the next reactivation, nor could we secure satisfactory evidence as to the relationship of reactivations to "sore throats," "common colds" and other forms of infection of the upper respiratory tract in other members of the families. We believe that such information can be obtained only by specially trained physicians devoting their entire time to a study such as that reported by Paul and Salinger¹⁵ in New Haven. Similar studies certainly seem indicated when one considers the suggestive work of Dochez,¹⁶ in which it appears that the virus of the common cold may not only prepare the oropharynx for invasion of bacteria but even transform such bacteria as are commonly found in the oropharynx from a nonvirulent to a virulent form. It is admittedly a difficult problem to prevent the spread of a common cold through a household, and yet, if successful, this may prevent reactivation or even death in children with latent rheumatic heart disease.

Most physicians have educated their patients as to the possibility of reactivation of tuberculosis in patients in whom this disease has been arrested and as to the possibility of transmission of this disease by the individual to other members of the family. It seems probable that members of rheumatic families may transmit a virulent streptococcus or a common cold to a child in their family suffering with rheumatic heart disease. Thus, in rheumatic fever a child should be protected

TABLE 5.—*Age at Time of Primary Manifestation as Compared with Present Functional Classification*

| Present Functional Classification | Age at Time of Primary Manifestation* | | | | | | | | | | | |
|-----------------------------------|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | Total 3 Yrs. Chil- dren | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Yrs. | Yrs. |
| Total children.. | 131 | 9 | 7 | 14 | 20 | 21 | 19 | 14 | 16 | 5 | 4 | |
| Per cent of total | 100 | 6.9 | 5.3 | 10.7 | 15.3 | 16.0 | 14.5 | 10.7 | 12.2 | 3.8 | 3.1 | |
| Class I..... | 27 | 1 | 1 | 4 | 7 | 3 | 3 | 4 | 2 | .. | .. | |
| Class II A..... | 34 | 1 | .. | 5 | 4 | 6 | 8 | 3 | 4 | 2 | 1 | |
| Class II B..... | 9 | 1 | .. | 1 | .. | 1 | 1 | 2 | 2 | .. | 1 | |
| Class III..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Class E..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Class F..... | 12 | .. | 1 | .. | 2 | 2 | 1 | 2 | 3 | .. | 1 | |
| Noncardiac..... | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | |
| Deceased..... | 48 | 6 | 5 | 7 | 10 | 5 | 6 | 4 | 2 | 1 | 1 | |
| Per cent..... | | 66.7 | 71.4 | 50.0 | 50.0 | 23.8 | 31.6 | 28.6 | 12.5 | 20.0 | 25.0 | |

* The average age of primary manifestations in our 438 children was 7.3 years.

from the members of the family, as in tuberculosis the members of the family are protected from the individual suffering with that infection.

TONSILLITIS AND THE EFFECT OF TONSILLECTOMY

There is a history of tonsillectomy and adenectomy previous to the primary manifestation in 30 of 141 of the more carefully studied cases. In seven of these, a

11. Paul, J. R.: Age Susceptibility to Familial Infection in Rheumatic Fever, J. Clin. Investigation 10: 53-60 (April) 1931.

12. Poynton, F. J.: Observations on the Nature and Symptoms of Cardiac Infection in Childhood, Brit. M. J. 1: 249 (March 2) 1918.

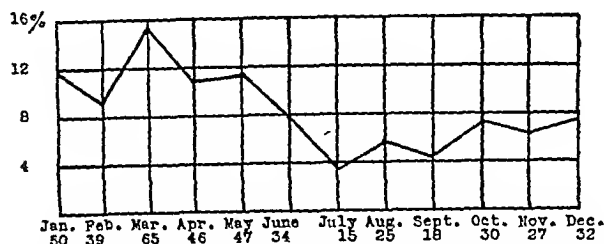
13. Levine, S. A.: A Clinical Conception of Rheumatic Heart Disease, read before the ninth scientific session of the American Heart Association, June 13, 1933.

14. Wilson, May G., and Swift, H. F.: Intravenous Vaccination with Hemolytic Streptococci, Am. J. Dis. Child. 42: 42-51 (July) 1931.

15. Paul, J. R., and Salinger, Robert: The Spread of Rheumatic Fever Through Families, J. Clin. Investigation 10: 33-51 (April) 1931.

16. Dochez A. R.: Studies of Acute Infection of the Upper Respiratory Tract, read before the American Climatological and Clinical Association, May 10, 1933.

careful nose and throat examination by an otolaryngologist has proved the operative results unsatisfactory. In 92 of these 141 more carefully studied children, the primary manifestation of rheumatic fever occurred before tonsillectomy and adenectomy. In 9 of these the results were found to be unsatisfactory but the otolaryngologist has not yet completed his investigation of the nose, throat and sinuses of the entire group. Our impression has been that in the majority of cases rheumatic children do better after tonsillectomy, although we have no actual proof that such an operation pre-



Seasonal prevalence of primary manifestations and reactivations of rheumatic fever; 279 (61 per cent) of 457 primary manifestations and reactivations occurred between December and May.

vents the primary manifestation of rheumatic fever or minimizes the reactivations. We must agree with the conclusion of Wilson and her associates⁶ that "the routine removal of the tonsils for the prevention of rheumatic heart disease in children is not based on conclusive data," and yet since Mackie¹⁷ states that "tonsillar infection was found to be more than twice as prevalent in rheumatic fever cases as in 400 non-rheumatic controls," and, in the most extensive study of this subject, namely, that of Kaiser,¹⁸ it is suggested that the first attacks of rheumatic manifestations occurred 34 per cent less often in the tonsillectomized group, we still feel justified in insisting on tonsillectomy before a child can be admitted to our heart hospital. We believe that the matter of sinus infection in the average rheumatic child has not received the attention with careful transillumination and roentgen studies which it warrants.

PREMATURE CONTRACTIONS AND AURICULAR FIBRILLATION

Of the group in which we have the most complete case histories, premature contractions have been found in fourteen. Auricular fibrillation has been found in ten of this group of 141. The latter arrhythmia occurred in children having had frequent reactivations and extensive cardiac damage and usually developed only a few months before the death of the child. In other words, in the majority of rheumatic children, auricular fibrillation seems to be usually almost a terminal event.

VALVULAR DAMAGE IN RELATION TO PROGNOSIS

Table 7 confirms our clinical impression that the mortality in rheumatic fever depends more on the severity of the toxemia and the poor resistance of the host than on the number of valves involved. In a

study by Levy¹⁹ of 100 children under 15 years of age with rheumatic heart disease involving the mitral valve and with signs of congestive failure, an accompanying aortic insufficiency was present in 81 children, and yet his first conclusion is that "heart failure in childhood is brought on by frequent reactivations." Our observations confirm this conclusion.

For the following reasons we believe that we may give an affirmative answer to our primary question as to the justification of continuing our treatment of rheumatic heart disease in the Children's Heart Hospital: 1. Our results are as satisfactory as those in any similar group of children which we find reported. 2. Careful training of the parents while their children are at our hospital appears to be a valuable contribution in the treatment of this disease in the social group from which these children are drawn. 3. The transfer of such a large group of children—with or without their families—to a tropical or semitropical climate does not seem practical, and the results of such a procedure have not as yet been fully established.

Finally, after a year's experience by one of us²⁰ with intravenous streptococcus vaccine preparations and a careful review of the experimental and clinical observations and results of Swift and Wilson,¹⁴ Coburn and Pauli,²¹ Clawson,²² and Collis and Sheldon,²³ we have begun treating our patients intravenously with a streptococcus nucleoprotein which Swift has kindly prepared for us at the Hospital of the Rockefeller Institute for Medical Research.

SUMMARY

1. In order to secure an efficient, accurate and valuable follow-up of groups of children with rheumatic heart disease treated in heart hospitals or cardiac clinics, the full time of a specially trained physician and at least one social service worker is absolutely necessary.
2. The average age of the primary manifestation of rheumatic fever in a group of 458 children in a con-

TABLE 6.—Present Functional Classification of Children as Compared to the Number of Reactivations

| Present Functional Classification | Total Children | Number of Reactivations | | | | | | | | |
|-----------------------------------|----------------|-------------------------|------|------|------|------|------|------|-------|---------|
| | | None | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unknown |
| Total children.... | 141 | 29 | 32 | 31 | 17 | 5 | 6 | 3 | 1 | 17 |
| Per cent of total.... | 100.0 | 20.5 | 22.7 | 22.0 | 12.1 | 3.5 | 4.3 | 2.1 | 0.7 | 12.1 |
| Class I..... | 28 | 12 | 6 | 4 | 5 | 1 | .. | .. | .. | .. |
| Class II A..... | 38 | 7 | 6 | 12 | 4 | 2 | 4 | 1 | .. | 2 |
| Class II B..... | 9 | 1 | 2 | 2 | 2 | .. | 1 | 1 | .. | .. |
| Class E..... | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. |
| Class F..... | 12 | 2 | 5 | 4 | 1 | .. | .. | .. | .. | .. |
| Noncardiac..... | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Deceased..... | 50 | 3 | 13 | 9 | 5 | 2 | 1 | 1 | 1 | 15 |
| Per cent..... | 35.5 | 10.1 | 40.6 | 29.0 | 29.4 | 40.0 | 16.7 | 33.3 | 100.0 | 88.2 |

valescent heart hospital in Philadelphia has been 7.3 years.

3. Of the 307 (64.8 per cent) children of whom we have information, 125 (40.7 per cent) are dead or

17. Mackie, T. T.: Rheumatic Fever, *Am. J. M. Sc.* 172: 199-221 (Aug.) 1926.

18. Kaiser, A. D.: Incidence of Rheumatism, Chorea and Heart Disease in Tonsillectomized Children, *J. A. M. A.* 89: 2239 (Dec. 31) 1927. The Relation of Tonsils to Acute Rheumatism During Childhood, *Am. J. Dis. Child.* 37: 559 (March) 1929. Results of Tonsillectomy: A Comparative Study of 2,200 Tonsillectomized Children with an Equal Number of Controls Three and Ten Years After Operation, *J. A. M. A.* 95: 837 (Sept. 20) 1930.

19. Levy, Joseph: Modes of Cardiac Insufficiency in Children with Heart Disease, *Am. J. Dis. Child.* 44: 1259-1267 (Dec.) 1932.

20. Stroud, W. D.; Bromer, A. W., and Gallagher, J. R.: Intravenous Vaccine in Rheumatic Cardiovascular Disease, *Tr. A. Am. Physicians* 47: 29-39, 1932.

21. Coburn, A. F., and Pauli, Ruth H.: Studies on the Relationship of Streptococcus Hemolyticus to the Rheumatic Process, *J. Exper. Med.* 56: 609-676 (Nov.) 1932.

22. Clawson, B. J.: Bacteriology of Acute Rheumatic Fever with an Experimental Basis in Animals for Vaccine Therapy, *Minnesota Med.* 14: 1 (Jan.) 1931; Experiments Relative to a Possible Basis for Vaccine Therapy in Acute Rheumatic Fever, *J. Infect. Dis.* 49: 90-97 (July) 1931.

23. Collis, W. R. F., and Sheldon, Wilfrid: Intravenous Vaccines of Hemolytic Streptococci in Acute Rheumatism in Childhood, *Lancet* 2: 1261-1264 (Dec. 10) 1932.

totally disabled and 182 (59.3 per cent) are working or able to work or go to school.

4. Accurate information as to the incidence of common colds, sore throats and other infections of the respiratory tract in other members of the family and their relationship to primary manifestations and reactivations of rheumatic fever cannot be obtained by questioning the children or their parents unless this problem and its possible importance has beforehand been carefully explained and frequently reiterated to the patient and each member of the family.

5. Measures to protect children with rheumatic heart disease from the common cold and other infections of the respiratory tract, both by hypothesis and by actual experience, offer, so far as we can judge, the most practical form of prophylactic treatment that at the present time can be freely recommended.

6. The use of intravenous preparations of hemolytic streptococci with the hope of lessening hypersensitivity is still in the experimental stage but offers much promise.

7. Of a total of 428 primary manifestations and reactivations of which we have positive information, 61 per cent occurred during or between the months of December and May, with a peak of 65 (15.2 per cent) during March. In Philadelphia during these months, the suggested prophylactic measures mentioned should be especially stressed in susceptible children between the ages of 6 and 10 years—the years during which

13. We believe that a continuance of the treatment of children with rheumatic heart disease in convalescent hospitals in those areas in which rheumatic fever is prevalent is still justified.

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ABSTRACT OF DISCUSSION

DR. T. DUCKETT JONES, Boston: Rheumatic fever and the resultant heart disease remain one of the blankest chapters of the infectious disease group. With the extensive crippling and high mortality, it becomes a major problem. The fact that the etiologic agent is unknown renders this problem difficult. The hemolytic streptococcus has been strongly indicted as this agent, but final proof of its etiologic significance is lacking. Rest is by far the most important therapeutic measure. Most students agree that rest in bed is advisable so long as there is evidence of active rheumatic fever. The evaluation of the type of therapy which the authors have discussed is most important and will help to determine more accurately just how much rest and care these patients need and what effect this has on the prognosis. It may be well to stress that the actual degree of valvular disease is not always important in these cases and is not a prognostic point of great significance. The severity and frequency of the reactivations or recurrences are important and determine the prognosis in the child or young adult. It is more important in these patients to determine the absence or presence of active rheumatic fever than to pay attention to whether or not one hears a mitral diastolic murmur. Circulatory mechanics plays a more important rôle in the patient above 30 years of age with a rheumatic heart disease. This may be the result of early degenerative lesions in addition to the already present rheumatic disease. The prognosis in those patients with conspicuous cardiac enlargement is as a rule quite grave.

DR. ALBERT G. YOUNG, Boston: A fact of great interest to the entire profession is that, despite all the care and money expended within ten years, 21 per cent of these children are dead and 46 per cent are either dead or hopelessly disabled: very disappointing when one considers that they were given the best treatment we have to offer. It is known that, in certain populous areas, having a climate marked by rain, dampness and changeable weather, rheumatic fever and infectious arthritis are most prevalent. In these areas the streptococci most generally considered as the etiologic agents of the disease are found growing in the upper respiratory tract of most of the inhabitants. If all children could be sent away from such districts, to the Southwest or the South, until they reached the age of puberty, perhaps there would be much less rheumatic fever. However, that is impossible. One must not look too closely to determine the exact organism that may be the cause of this disease, because it is conceivable that, wherever there is a large number of streptococci present, any one of the number may produce the disease. The present method of treatment is supportive and not combative. If the patient has good resistance he may recover. It is a challenge to the profession to consider this disease from a point of view directed toward aggressive rather than supportive treatment. I am looking at rheumatic fever and inflammatory rheumatism as nonspecific allergic processes, and I believe that progressive therapy must be instituted to combat them. Each patient must be treated in an aggressive as well as a supportive manner. Perhaps desensitization to streptococci will prove feasible, but I also believe that the problem should be investigated from the standpoint of chemotherapy. There are certain compounds that are known to have some possibility in preventing allergic inflammatory reactions. They deserve more study. In view of the fact that serologic efforts have not been crowned by too much success, physicians should enlist the aid of the chemist, the pharmacologist, the internist and the pathologist. It is work like that of Dr. Stroud and his co-workers that brings the whole situation to a focus.

DR. WILLIAM D. STROUD, Philadelphia: The points brought up by Dr. Jones which I believe to be of especial importance are, first, the prevalence of this disease, and, second, our meager knowledge as to positive measures of prevention and treatment. As Dr. Longcope said to me a few years ago, "This is the dis-

TABLE 7.—*Deceased Children by Age at Death and Extent of Valvular Damage*

| Age at Death | Total Deceased Children | | Mitral Disease | | Mitral and Aortic Disease | |
|--------------------|-------------------------|----------|----------------|----------|---------------------------|----------|
| | Num-ber | Per Cent | Num-ber | Per Cent | Num-ber | Per Cent |
| Total..... | 48 | 100.0 | 24 | 100.0 | 24 | 100.0 |
| 5 years..... | 2 | 4.2 | 1 | 4.2 | 1 | 4.2 |
| 6 years..... | 1 | 2.1 | 1 | 4.2 | .. | .. |
| 7 years..... | 3 | 6.2 | 2 | 8.3 | 1 | 4.2 |
| 8 years..... | 4 | 8.3 | 3 | 12.5 | 1 | 4.2 |
| 9 years..... | 3 | 6.2 | 1 | 4.2 | 2 | 8.3 |
| 10 years..... | 4 | 8.3 | 2 | 8.3 | 2 | 8.3 |
| 11 years..... | 5 | 10.4 | 2 | 8.3 | 3 | 12.5 |
| 12 years..... | 6 | 16.7 | 4 | 16.7 | 4 | 16.7 |
| 13 years..... | .. | .. | .. | .. | .. | .. |
| 14 years..... | 2 | 4.2 | .. | .. | 2 | 8.3 |
| 15 years..... | 3 | 6.2 | 2 | 8.3 | 1 | 4.2 |
| 16 years..... | 2 | 4.2 | 1 | 4.2 | 1 | 4.2 |
| Over 16 years..... | 1 | 2.1 | .. | .. | 1 | 4.2 |
| Age unknown..... | 10 | 20.8 | 5 | 20.8 | 5 | 20.8 |

primary manifestations and reactivations are most apt to occur.

8. In our group, by far the greatest number of patients were of Italian, Hebrew, American and Irish parentage, in the order named.

9. There seems to be a familial incidence at least as high as that in tuberculosis.

10. Although we have no positive proof that the routine removal of tonsils prevents primary manifestations or minimizes reactivations of rheumatic fever, we believe that such a procedure, plus a careful study of the sinuses, is still justified in the type of child included in this study.

11. Premature contractions are found with relative infrequency in this group, and auricular fibrillation, if found, is usually a terminal or near terminal event.

12. The valve or number of valves involved in rheumatic heart disease in childhood has little to do with prognosis as compared to the virulence of the infection, the resistance of the host and the number of reactivations.

ease of which we probably know least and which is as important as any problem in cardiovascular disease." The familial incidence of this disease is worthy of note. As Dr. Bierring has said concerning hypertensive arteriosclerotic cardiovascular disease, so with rheumatic heart disease it may be possible through its familial incidence to ascertain the children most susceptible and to institute a few preventive measures of which there is some knowledge at an early age and thus possibly obtain better results. I would emphasize the importance of careful observation of these children throughout their lives. The common cold is of great importance in relation to these children and it may possibly be the cause of reactivations with an occasional fatal outcome. Dochez has shown recently that when positive cultures of influenza bacilli and the pneumococci were found in the throats of chimpanzees, a common cold apparently transformed these influenza bacilli and pneumococci from nonvirulent to virulent forms. This brings up the question as to the relationship of the common cold to acute manifestations of rheumatic fever in children with rheumatic heart disease.

HEPATOSPLENOGRAPHY WITH THORIUM DIOXIDE SOL

CLINICAL EXPERIENCE WITH ONE HUNDRED PATIENTS

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Although the Council on Pharmacy and Chemistry of the American Medical Association in December, 1932, reported unfavorably on the intravenous use of thorium dioxide,¹ it did not entirely condemn its use but urged great caution therein. The study of the Council did not reveal serious ill effects, so far as clinical experience was concerned, with the use of thorium dioxide sol administered intravenously, but it brought forward the possibilities of latent radioactivity, remote partial conversion of the metal into more radioactive mesothorium and radiothorium and sensitization of tissues to x-ray or radium therapy. These possibilities are all due to the facts that thorium dioxide is a heavy metal with some radioactivity and that after being phagocytosed by the reticulo-endothelial cells of the body it is extremely slowly excreted from the body, probably requiring years to be completely removed. Although we had used this metal for roentgenographic demonstration of structural changes of the liver and spleen for nearly two years in a large series of patients without having noted any serious immediate or remote effects, we immediately adopted an attitude of greater caution after the publication of the report of the Council and confined the use of the metal to patients who did not have a reasonable chance of long life. In reporting our experience with this method of diagnosis in 100 patients, we would urge a similar method of selection of patients on those who desire to employ it.

Although Einhorn and Stewart² were apparently the first to undertake the development of a method of "visualizing" the liver and spleen, using tetraiodophenolphthalein and diiodoatophan. Paul Radt of Berlin was the first to use a thorium compound for this

purpose, and to him³ is due the greatest amount of credit for developing hepatosplenography, although many others have added valuable information on the subject.⁴ A few months after Radt's original reports we became interested, and at the annual session of the Association in New Orleans in May, 1932, we reported on the use of the method in forty patients.⁵ We were greatly impressed with the results, and since then our enthusiasm has not waned.

ANIMAL EXPERIMENTATION

A number of investigators have reported results of animal experimentation with thorium dioxide sol. The metal is removed from the blood stream several hours after intravenous injection by the cells of the reticulo-endothelial system in the liver, spleen, bone marrow, lymph nodes and to some extent by the lungs, heart, ovaries and suprarenal glands. It is eliminated very slowly; in fact, some of it may remain in the tissues for years. Various authors report different rates of elimination. The liver apparently loses the substance faster than other organs. Elimination may occur mainly through the bile and urine, as indicated by the work of Leipert,⁶ but apparently it may take place also by cellular transport to the lungs and be removed by the bronchial mucus, as shown by Kadrnka⁷ and by Irwin.⁸

Histologically, the metal appears as greenish, refractive granules in the reticulo-endothelial cells, which appear globular and in which the nucleus is displaced to the periphery. The larger the dose, the greater the engorgement of the cells.

Pathologic changes in animals, thought to be due to the foreign substance, have been reported by some investigators, but many have concluded that the damage is transitory or negligible. The work of Tripoli and Haam,⁹ which has been followed to some extent by one of us (Yater), leads us to believe that in the dosage used in man there is no danger of direct injury due to the presence of the thorium dioxide in the tissues.

Lambin¹⁰ studied the effect of injections in rabbits on the blood picture. Moderate doses produced an

3. Radt, Paul: Eine Methode zur röntgenologischen Kontrastdarstellung von Milz und Leber, *Klin. Wchnschr.* 8:2128-2129 (Nov. 12) 1929; Ueber die körnige Ablagerung kolloider Farbstoffe in den Leberparenchymzellen von Kaninchen nach intravitaler Injektion (nach Versuchen mit Tusche und Eisen), *Ztschr. f. d. ges. exper. Med.* 69:721-741, 1930; Eine neue Methode zur röntgenologischen Kontrastdarstellung von Leber und Milz durch Injektion eines kolloidalen Thoriumdioxids, *Med. Klin.* 26:1888-1891 (D. logischen Kontrastdarstellung von Leber und Milz, *Verhandl. d. deutsch. Gesellsch. f. inn. Med.* 43:443-451, 1931.

4. Oka, M.: Klinische Anwendung der "Lienographie," einer neuen Methode zur röntgenologischen Darstellung von Milz und Leber, *Fortschr. a. d. Geb. d. Röntgenstrahlen* 41:892-898 (June) 1930; Eine neue Methode zur röntgenologischen Darstellung der Milz (Lienographie), *ibid.* 40:497-502 (July) 1931; Kadrnka, S.: Hépato-spléno-graphie: Méthode de l'introduction intraveineuse de la substance colloïdale de dioxyde de thorium, *Schweiz. med. Wchnschr.* 61:425-428 (May 2) 1931; Bauman, H., and Schilling, C.: Zur Kontrastuntersuchung von Milz und Leber (I. Mitteilung), *Klin. Wchnschr.* 10:1249 (July 4) 1931; Dickson, W. H.: Thorotrast: A New Contrast Medium for Radiological Diagnosis, *Canad. M. A. J.* 27:123-129 (Aug.) 1932.

5. Yater, W. M., and OteLL, L. S.: The Differential Diagnosis of Diseases of the Liver and Spleen by the Aid of Roentgenography After Intravenous Injection of Thorotrast, *Am. J. Roentgenol.* 29:172-181 (Feb.) 1933.

6. Leipert, Theodor: Ueber die Verteilung des Thorium im Organismus nach Injektion von Thorotrast, *Wien. klin. Wchnschr.* 44:1135-1136 (Sept. 4) 1931.

7. Kadrnka, S.: Hépato-spléno-graphie röntgenologische Darstellung des Parenchyms der Milz und Leber durch ein neues in die Blutbahn eingebrachtes kolloidales Kontrastmittel (Thorotrast), *Fortschr. a. d. Geb. d. Röntgenstrahlen* 44:9-15 (July) 1931.

8. Irwin, D. A.: Experimental Intravenous Administration of Colloidal Thorium Dioxide, *Canad. M. A. J.* 27:130-135 (Aug.) 1932.

9. Tripoli, C. J., and Haam, E. v.: Effects of Toxic and Nontoxic Doses of Thorium Dioxide in Various Animals, *Proc. Soc. Exper. Biol. & Med.* 29:1053-1056 (June) 1932.

10. Lambin, P.: Influence du dioxyde de thorium colloïdal (Thorotrast) sur la formule sanguine, *Compt. rend. Soc. de biol.* 108:264-266 (Oct. 16) 1931.

From the Georgetown University and Gallinger Municipal hospitals and the Radium Institute, Washington, D. C., Drs. Groover, Christie and Merritt, and Chemistry: Thorotrast, J. A. M. A. 99:

2. Einhorn, Max, and Stewart, W. H.: On Hepatosplenography, *M. J. & Rec.* 126:430-433 (Oct. 5) 1927.

erythroblastic reaction, while large doses produced a pronounced anemia, recovery from which was spontaneous. A phase of leukopenia followed the injections, but this changed to a longer phase of leukocytosis, first of granulocytes and later of monocytes. Popper and Klein¹¹ in similar experiments did not find changes in

and has pointed out the various probable functions of these cells. Apparently not one of these functions is seriously or even moderately impaired by the method under discussion.

RADIOACTIVITY OF THORIUM DIOXIDE SOL (THOROTRAST)

Seventy-five cubic centimeters of thorium dioxide sol (Thorotrast¹⁷) contains a quantity of thorium dioxide equivalent in alpha-ray activity to 1.5 to 3.0 micrograms of radium. The beta-ray and gamma-ray activity of this amount of thorium dioxide is probably too feeble to be of physiologic significance, but the alpha-ray activity is thought to be sufficient to be a potential source of danger when dispersed through the tissues. Proofs of ill effects from this source, however, are thus far totally lacking, nor is there any published work which shows that there is either further increase in radioactivity with the passage of time or sensitization of tissues to roentgen rays by thorium dioxide sol. Radt¹⁸ has observed no ill effects of any kind after three and a half years of extensive experience with thorium dioxide sol both in animals and in man. Neither have we observed any changes attributable to the presence of thorium dioxide in the tissues of patients after more than two years. One patient with myeloid leukemia who has had seven roentgen treatments during two years following the injections of colloidal solution of thorium dioxide has remained in excellent condition and has not shown any evidence of sensitization to x-rays. Another patient has had a similar experience during a shorter period of time.

REACTIONS DUE TO THORIUM DIOXIDE SOL

Reactions following the injection of thorium dioxide sol into the blood stream have been few and mild. Occasionally there is a slight transitory discomfort, mild tension of the limbs, chilly sensations, or a mod-



Fig. 1.—Area of lessened density in liver shadow, proved to be primary carcinoma of the liver.

the blood picture of any importance. Thrombocytopenic purpura was produced in several rabbits by Shih and Jung¹² with doses of thorium dioxide sol several times greater than those used in man. In this connection, we have not observed significant changes in the platelet count in several of our patients following the injections.

The question concerning the effect of partial blockade of the reticulo-endothelial system by thorium dioxide sol on the immune reactions of the body to infection has been satisfactorily answered by Held,¹³ by Vara-López and Thorbeck,¹⁴ and by Randerath and Schlesinger.¹⁵ These workers concluded in the main that the presence of large amounts of the metal in the reticulo-endothelial cells has no very appreciable effect on antibody formation, hemolysin titer, albumin-globulin coefficient, reciprocal storage capacity of the cells or, in general, on the defense mechanism of the body against infection. One of us¹⁶ has reviewed the subject of the physiology of the reticulo-endothelial system

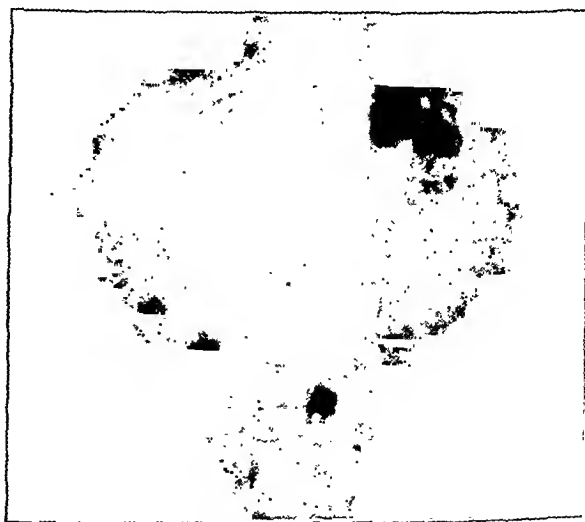


Fig. 2.—Ordinary flat roentgenogram of abdomen of patient whose film after administration of thorium dioxide sol is shown in figure 3.

erate rise in temperature. Reactions attributable to the injection of thorium dioxide sol other than slight

11. Popper, H. L., and Klein, E.: *Ueber Hepato-Lienographie*, München. med. Wchnschr. 78: 1829-1830 (Oct. 29) 1931.

12. Shih, H. E., and Jung, T. S.: Thrombocytopenic Purpura Hemorrhagica Produced Experimentally with Thorium, Proc. Soc. Exper. Biol. & Med. 29: 243-245 (Dec.) 1931.

13. Held, A.: Thorotrast und Infektion: Zur Frage der Blockade des retikulo-endothelialen Systems, Fortschr. a. d. Geb. d. Röntgenstrahlen 45: 330-334 (March) 1932; Thorotrast und Infektionsabwehr, Ztschr. f. d. ges. exper. Med. 81: 218-222, 1932; Die Einwirkung der Thorotrast Injektion auf den Hämolytintiter des Blutes, Klin. Wchnschr. 11: 463-464 (March 12) 1932.

14. Vara-López, R., and Thorbeck, K.: Röntgenologische Sichtbarmachung von Leber und Milz, Arch. f. klin. Chir. 169: 236-244, 1932.

15. Randerath, Edmund, and Schlesinger, M.: Experimentelle Untersuchungen über die Wirkung des Thorotrastes (Heyden) im Tierkörper, Ztschr. f. d. ges. exper. Med. 90: 245-260, 1931.

16. Otell, L. S.: The Reticulo-Endothelial System and Its Relation to the Roentgen Study of the Intravenous Administration of Thorium Dioxide, J. Clin. Invest. 12: 148-156 (Sept.) 1932.

17. Thorotrast is the trade name given by the Heyden Chemical Corporation to its stabilized, colloidal solution of thorium dioxide, which contains 25 per cent by volume of thorium dioxide. Thorotrast has been the preparation of thorium dioxide used by us and others for hepatosplenography.

18. Radt, Paul: Personal communication to the authors.

fever occurred in only 4 of 100 patients on whom we used the method. A patient with Banti's disease complained of severe pain in the lumbar region and chest followed by spasmodic contractions of the rectus abdominis muscles, which subsided without residual symptoms or signs. Another patient complained of transient lumbar pain after the first injection. A child had some puffiness of the eyelids and face for three days. A fourth patient, who died as the result of

renal insufficiency has been deduced by Kadrnka⁷ as a contraindication, since this author thinks that most of the thorium dioxide sol may be eliminated through the bile and urine, and its continuous presence in the circulating blood might be detrimental. Whether the latter is true or not, one would hardly desire to make use of the metal in patients with such a serious condition.

METHOD OF ADMINISTRATION

In adults of average size, 25 cc. of thorium dioxide sol is administered intravenously on each of three successive days. In children the dose is reduced roughly in proportion to the weight. More accurate estimation of dosage on the basis of body weight is apparently unnecessary. In general, the density of the roentgen shadows of the liver and spleen depends on the quantity of the medium administered and the anatomic and functional integrity of the cells that store it. If only the outlines of the liver and spleen are desired, the dose may be reduced one half or even one third. Fractional doses are used in order to eliminate the shock that might be produced by the injection of too large a dose of foreign material.

Films may be taken at any time after four hours following the last injection, but preferably twenty-four hours later. The night before the examination the patient is given the usual evening meal and at bedtime 8 Gm. of compound licorice powder. The morning of the examination a cleansing enema is given and the patient is advised to come to the x-ray department without breakfast. Films are taken in both the prone and the supine position on the Bucky diaphragm. The tube is centered over the ensiform cartilage. The following technic has been used in patients of the average physique: 60 kilovolts peak at 100 milliamperes for three and one-half seconds at a 25-inch distance. It is well in most individuals to place the film transversely



Fig. 3.—Atrophic cirrhosis of liver. Small size of liver and diffuse mottling are obvious. The spleen is enlarged and apparently bigger than the liver. (Compare with figure 2.)

hemorrhage from a traumatically ruptured spleen, had vomiting and transient collapse, which may or may not have been due to an injection of thorium dioxide.

Büngeler and Krautwig¹⁹ reported a case of fatal rupture of an enlarged spleen occurring twenty-two hours after a second injection of thorium dioxide sol. Many of our patients had enlarged spleens, but the only one who had a reaction was the one with Banti's disease. Stewart, Einhorn and Illick²⁰ noted hematemesis in a patient with Banti's disease and jaundice, which may have been due to the use of colloid solution of thorium dioxide.

CONTRAINDICATIONS FOR THE TEST

In view of the uncertainty of the effect of alpha radiation by thorium dioxide and the possibility of remote conversion of some of the substance to a more radioactive preparation, we suggest that for the present thorium dioxide sol be used only for patients who are subjects of a rapidly fatal disease. In our experience there have been practically no contraindications for the use of the test from other standpoints. In the case of patients who have lived for many months after the injections, there have been no apparent ill effects. Even extremely ill patients have not appeared to be harmed by the procedure, although moribund patients should naturally not be subjected to it. It is possible that the use of the method may be inadvisable in hemorrhagic conditions and in patients with active tuberculosis. Simultaneous severe liver disease and

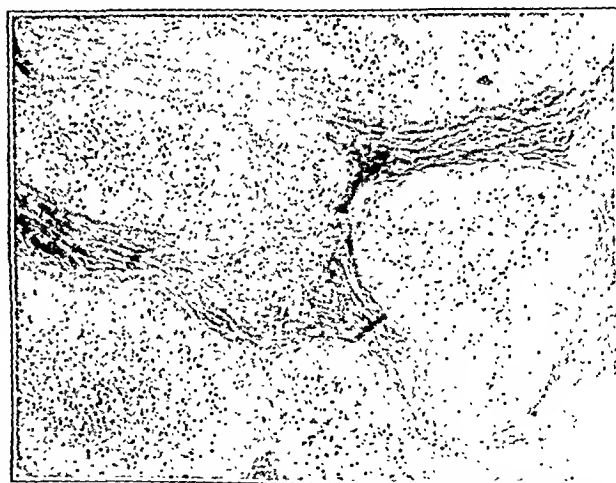


Fig. 4.—Microscopic section of liver of patient whose x-ray films are shown in figures 2 and 3, showing islands of liver tissue containing thorium dioxide sol (black dots) surrounded by fibrous tissue. Reduced from a photomicrograph with a magnification of 72 diameters.

in order to get a good image of the spleen and liver on the same film. A more comprehensive idea of the structural characteristics of the liver and spleen is obtained by making several exposures within a range of 10 kilovolts of this dosage. Careful technic is essential in securing films that show details of structural change.

19. Büngeler, W., and Krautwig, J.: Ist die Hepato-Lienographie mit Thorotrast eine unschädliche diagnostische Methode, *Klin. Wchnschr.* 11: 142-144 (Jan. 23) 1932.

20. Stewart, W. H.; Einhorn, Max, and Illick, H. E.: Hepatography and Lienography Following the Injection of Thorium Dioxide Sol (Thorotrast), *Am. J. Roentgenol.* 27: 53-58 (Jan.) 1932.

APPEARANCE AND SIZE OF THE NORMAL LIVER AND SPLEEN

In good films the liver should cast a homogeneous shadow of approximately the same density as the spine. The spleen normally has a density slightly less than that of the liver shadow, and about the same as that of the ribs.



Fig. 5.—Atrophic cirrhosis of liver. Liver shadow is homogeneous but of greatly reduced density. Spleen is enlarged.

In determining whether the liver and spleen are normal in size, it is necessary to know what the average normal size of these organs is. We obtained very little help from the literature in this regard, and unfortunately a sufficient number of individuals without alteration of the liver and spleen has not been studied to form a basis for this comparison. The only work of any value in reference to the size of the liver is that of Pfahler,²¹ who compiled tables of the size of the liver in subjects of both sexes, of different ages and of varying heights and weights. These data were computed from flat films of the abdomen. Pfahler found that there was very little variation in adults in the size of the liver determined roentgenographically. Two measurements of the liver shadow were taken; one was the "length," which was measured from the highest point of the upper border to the lowest border of the tip of the right lobe; the second measurement was made obliquely from the upper border to the lower border in a direction that gave the maximum measurement of the apparent thickness of the liver. The average normal length of the liver shadow was 21.3 cm., with limits of approximately 18 to 22 cm., and the average oblique measurement was 12.8 cm., with limits of approximately 10 to 14 cm. These data, while the best available, are obviously inaccurate because of the indistinctness of the liver shadow in such films. The measurements were only comparative, since the short distance between the tube and the film (25 inches) produced some distortion.

After the use of thorium dioxide sol, the right lobe of the liver appears to constitute most of the organ. The left lobe looks very small and is frequently obscured by the shadow of the spine. The left extremity of the liver rarely extends more than 8 cm. to the

left of the midline. It comes to an acute angle under the left leaf of the diaphragm. The presence of ascites may give a false impression of the size of the liver, causing it to appear smaller than it should.

Comparative determinations of the size of the spleen are still more difficult, since the spleen normally varies a great deal in size from time to time. Also, in normal subjects after the injection of thorium dioxide sol the spleen may not be well visualized because of gas in the stomach. Even in cases of splenomegaly there may be some difficulty with this method in accurately determining the limits of the spleen for the same reason. Nevertheless, after experience with the method one may be able to estimate fairly accurately the size of the spleen, and changes in the size of the spleen in the same individual may be followed. The spleen may be considered to be of normal size if it occupies the space of two ribs and two interspaces. For recording our measurements, we have used the greatest dimension and the dimension taken at a right angle to this through the middle of the organ.

STUDY OF CASES

We found the method of greatest value for the following purposes:

1. To detect whether enlargement of the liver or spleen accounts for the presence of a tumor found by physical examination in the upper part of the abdomen. Sometimes we were surprised to find that what was thought to be a tumor of the kidney or some other organ was a tumor of the liver, and vice versa.

2. To determine whether the liver is cirrhotic or contains tumor masses. Atrophic cirrhosis, hypertrophic cirrhosis, syphilitic scarring, metastatic car-



Fig. 6.—Hypertrophic cirrhosis of liver. Moderate splenomegaly.

cinoma or sarcoma, primary tumor, abscess, cyst and amyloidosis can all be readily "visualized." Abscess, cyst and primary tumor may give some trouble in differential diagnosis. Reeves and Apple²² have recently reported an abscess of the liver which was successfully diagnosed.

21. Pfahler, G. E.: The Measurement of the Liver by Means of Roentgen Rays Based on a Study of 502 Subjects, *Am. J. Roentgenol.* 16: 558-563 (Dec.) 1926.

22. Reeves, R. J., and Apple, E. D.: The Use of Thorium Dioxide in the Diagnosis of Liver Abscess, *J. A. M. A.* 100: 1682-1683 (May 27) 1933.

3. To ascertain the presence or absence of metastases in the liver prior to operation in patients found to have cancer and for whom operation is contemplated. Ericksen and Rigler²³ have recently emphasized this point.

Less important uses are:

4. To settle the question whether there is rupture of the liver or spleen.



Fig. 7.—Scarred liver resulting from gummatous syphilis (hepar lobatum). The spleen is considerably enlarged.

5. To determine whether subacute or chronic jaundice is due to intrahepatic disease or obstruction of the common bile duct.

Diagnoses by Hepatosplenography in One Hundred Cases

| Roentgenographic Diagnosis | Cases Proved by Operation or Biopsy | Cases Proved by Necropsy | Total Cases |
|--|-------------------------------------|--------------------------|-------------|
| Atrophic cirrhosis of liver..... | 1 | 4 | 12 |
| Hypertrophic cirrhosis of liver..... | 1 | 1 | 7 |
| Syphilis of liver (hepar lobatum)..... | .. | 1 | 1 |
| Metastatic carcinoma of liver*..... | 2 | 7 | 16 |
| Primary tumor of liver..... | 2 | .. | 2 |
| Focal necrosis of liver..... | 1 | .. | 1 |
| Obstruction of common bile duct..... | 2 | 1 | 3 |
| Anyloidosis of liver..... | .. | .. | 1 |
| Hepatic lobectomy, postoperative..... | 1 | .. | 1 |
| Rupture of spleen..... | 1 | .. | 1 |
| Excystation of right diaphragm..... | 1 | .. | 1 |
| Pneumonitis of the right lung simulating elevation of diaphragm..... | .. | .. | 1 |
| Hepatomegaly (cause not determined)..... | .. | 2 | 7 |
| Splenomegaly (cause not determined)..... | .. | .. | 11 |
| Hepatomegaly and splenomegaly (cause not determined)..... | 1 | 3 | 6 |
| Normal liver and spleen..... | 2 | 5 | 24 |
| Questionable..... | .. | .. | 2 |

* One was proved to be wrong at necropsy and shown to be obstruction of the common bile duct.

6. To follow the progress of disease of the liver or spleen by means of films taken at intervals.

7. To ascertain the position of the diaphragm when it is difficult to decide whether a lesion is above or below it.

8. To reveal ascites when its presence is questionable clinically.

23. Ericksen, L. G., and Rigler, L. G.: Roentgen Visualization of Liver and Spleen with Thorium Dioxide Sol, with Particular Reference to the Preoperative Diagnosis of Carcinomatous Metastases in the Liver, *J. A. M. A.* 100: 1758-1764 (June 3) 1933.

9. To study diseases of the spleen.

The accompanying table shows the diagnoses of the condition of the liver and spleen in our hundred patients, together with the number of the cases of each kind in which the diagnosis was confirmed by operation and biopsy or by necropsy. More than one third of these patients are known to have died as a result of the disease for which they were hospitalized. Undoubtedly, a number of others have also died.

1. *Detection of Nature of Mass in the Upper Part of the Abdomen.*—As illustrations of the value of the method for this purpose, two cases may be briefly cited:

A woman, aged 56, was found on physical examination to have a large mass in the right upper quadrant of the abdomen. This mass felt quite like a large tumor of the right kidney and was thought to be a hypernephroma. Hepatosplenography (fig. 1) revealed, however, an enlarged right lobe of the liver containing a large, somewhat irregular area of lessened density, which was diagnosed primary carcinoma of the liver. Operation and biopsy revealed this diagnosis to be correct.

A man, aged 64, showed on physical examination a large mass in the epigastrium which appeared as though it might have been a tumor of the liver. Hepatosplenography showed that the liver was normal. Necropsy revealed a large lymphosarcoma of the abdomen.

2. *Diagnosis of Liver Disease.*—For this purpose, hepatosplenography is of great value. The characteristic appearances of various conditions of the liver are as follows:

Atrophic Cirrhosis: One of two characteristic pictures may be given by this condition. The liver may be smaller than normal and diffusely mottled with small areas of opacity in a background of greatly lessened density (figs. 2 and 3). The spleen is practically always



Fig. 8.—Liver invaded by large metastatic carcinomatous lesions. The necropsy specimen is shown in figure 9.

moderately enlarged. The appearance is due to the fact that there are relatively large islands of regenerated liver tissue throughout a very fibrotic organ. The islands of liver tissue contain reticulo-endothelial cells and hence thorium dioxide sol, whereas the surrounding fibrous tissue is devoid of reticulo-endothelial cells (fig. 4). The areas of opacity represent, therefore, the islands of remaining liver parenchyma.

The other appearance is that of a liver of perhaps normal or nearly normal size but which casts a homogeneous shadow of definitely reduced density (fig. 5). The spleen is practically always moderately enlarged. The appearance of the liver is due to the fact that there is a fine meshwork of fibrous tissue throughout the organ with small islands of regenerated liver tissue

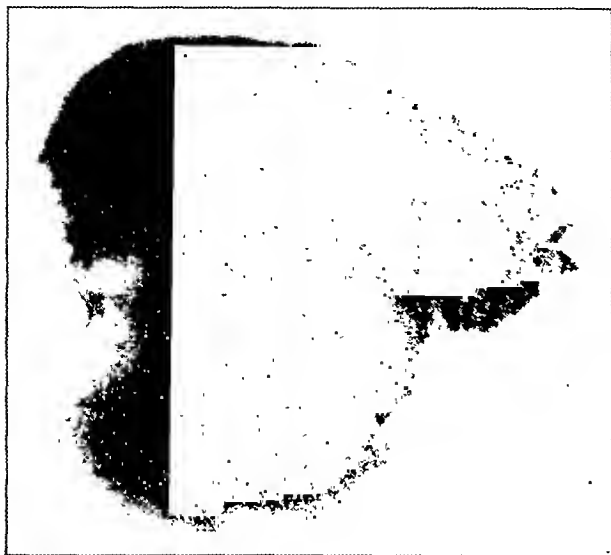


Fig. 9.—Liver at necropsy of patient whose antemortem roentgenogram is shown in figure 8.

embedded therein. The result is a generalized reduction of reticulo-endothelial cells, since regenerated liver tissue contains a much smaller amount of these cells than normally and there is also an actual reduction in the amount of liver tissue.

Hypertrophic Cirrhosis: A more active regenerative process in the liver produced by a more active toxic or infectious agent results in a greatly enlarged liver rather than a shrunken one. The appearance of the liver in the film is, therefore, that of an enlarged organ casting a homogeneous shadow of lessened density (fig. 6). In some instances there may be a suggestion of mottling. The spleen is usually moderately enlarged.

Syphilis of the Liver: Syphilitic cirrhosis of the Laënnec type produces the same appearance as atrophic cirrhosis. The gross scarring resulting from the healing of gummas (*hepar lobatum*) gives, however, a characteristic appearance. There is gross deformity and lobulation, which is shown exceedingly well in figure 7. The picture is quite different from that of metastatic carcinoma, since there are no definite, rounded areas of reduced density.

Metastatic Carcinoma: The evidence given by hepatosplenography is incontrovertible. There are multiple, large and small, rounded areas of greatly reduced density in an enlarged organ (figs. 8, 9 and 10). These areas are usually surrounded by a halo of increased density. The spleen is practically always normal in size. The appearance of the liver is due to the fact that carcinomatous tissue does not contain reticulo-endothelial cells.

Primary Tumor: A single primary tumor produces a large area of reduced density with a somewhat irregular but usually fairly sharp outline in an enlarged organ (fig. 1). The halo of increased density is usually lacking. The spleen is not enlarged.

Abscess: A solitary abscess produces much the same appearance as a single primary tumor, except that the outline may not be as well defined and the area may be more peripheral. Multiple abscesses produce multiple areas of this kind. The spleen may be somewhat enlarged.

Cyst: A cyst produces a round, sharply defined area of reduced density. The spleen is usually not enlarged.

Amyloidosis: One of our patients had amyloidosis due to chronic, suppurating tuberculous spondylitis. The liver was much enlarged, of reduced density, and absolutely homogeneous. The spleen was moderately enlarged but of normal density. The appearance was that of hypertrophic cirrhosis, but there was not the slightest suggestion of mottling.

Other Diseases of the Liver: Catarrhal jaundice shows nothing definitive in the film. The liver is usually moderately enlarged, especially the right lobe, but is of practically normal density; the spleen may be slightly enlarged. Toxic hepatitis gives a similar picture. In passive congestion of the liver, there is some enlargement of the liver shadow and perhaps some slight diminution of density; the spleen is not enlarged. Focal necrosis is suggested by the presence of small vacuoles throughout the liver shadow.

3. Detection of Metastases in the Liver.—The importance of knowing whether metastases are present in the liver in a patient known to have a carcinoma, particularly of an abdominal viscus, is self evident. This knowledge may be the deciding factor in settling the question of the advisability of undertaking surgical relief. We are using the method almost as a routine for this purpose.

4. Diagnosis of Rupture of the Liver or Spleen.—Our experience in this field includes two cases. In one,

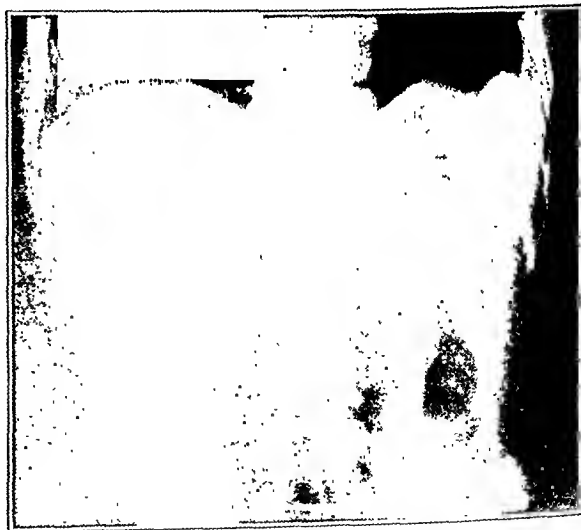


Fig. 10.—Metastatic carcinoma of liver, giving Swiss cheese appearance.

a little girl had been crushed by an automobile and was suffering severe abdominal pain. Injection of 15 cc. of thorium dioxide sol intravenously followed by the taking of films after four hours showed the liver and spleen to be intact. Operation was deferred, and the child left the hospital in forty-eight hours. In a similar case the surgeon operated on a man for rupture of the liver, found an intact liver and blood in the abdomen, made another incision over the spleen and found a

lacerated spleen but could not remove it. After injection of 25 cc. of thorium dioxide sol intravenously, the diagnosis could be made from the film. Had the patient received the benefit of this procedure before operation, he would have been saved the primary operation. It requires but one dose of the metal to determine whether rupture of one of these organs exists, and the



Fig. 11.—Obstructive jaundice. Dilated intrahepatic bile ducts "visualized" in enlarged right lobe.

films may be taken at the end of four hours. This amount of thorium dioxide is probably devoid of remote ill effects.

5. Determination of the Cause of Jaundice.—In several instances we have been able to determine whether jaundice was due to intrahepatic disease or to obstruction of the common bile duct, a rather important question that frequently arises. In three instances, the dilated intrahepatic ducts were seen as branching channels of greatly reduced density, and in all three obstruction of the common bile duct was found to exist (fig. 11). This appearance would probably be obtained only in cases in which the obstruction had existed for a few weeks, since time is necessary to cause dilatation of the ducts sufficient for "visualization." In other cases, operation was obviated because dilatation of the intrahepatic bile ducts was not demonstrated.

6. Follow-Up of the Progress of Hepatic or Splenic Disease.—We have taken films of patients at intervals of months after giving thorium dioxide sol. Usually there was no appreciable change. Undoubtedly changes could readily be detected, however, if any important ones occurred. After months, there was very little reduction of density of the shadows of the liver and spleen in most of our cases, although, in a few, definite reduction was noted.

7. Ascertaining the Position of the Diaphragm.—In one case very valuable information was obtained in regard to the position of the diaphragm. A woman with weakness, loss of weight and fever was found to have evidence of disease on physical examination in the region of the right side of the diaphragm. Fluoroscopic examination revealed elevation and greatly diminished motion of the right side of the diaphragm. Since the patient had had an appendectomy some weeks previously, it was thought she might have a subphrenic abscess. Hepatosplenography revealed the fact that the

liver, normal in size and structure, was elevated *en masse*, pushing the diaphragm up. The case was probably one, therefore, of eventration of the right diaphragm. Later, a low-grade pelvic abscess was found, and operation cured the patient of her symptoms. In another case, hepatosplenography demonstrated that the lesion was above the right diaphragm, when flat x-ray films showed what might have been a subphrenic abscess.

8. Diagnosis of Ascites.—The use of thorium dioxide sol to determine simply whether ascites exists is not recommended, but ascites is easily demonstrated by separation of the liver and sometimes of the spleen from the lateral walls of the abdomen. In some cases ascites was shown roentgenographically to exist when its presence was not suspected on physical examination.

9. Study of Diseases of the Spleen.—Hepatosplenography is not of very great value in the diagnosis of diseases of the spleen. Splenomegaly is readily detected, but specific or diagnostic structural changes are not often noted. In an untreated case of chronic leukemia, the enlarged spleen may cast a shadow of reduced density, owing to leukemic infiltration (fig. 12). After treatment the spleen is seen to be smaller and of normal density. No abnormality of the splenic shadow was noted in early sickle-cell anemia, xanthomatosis, Banti's disease or purpura haemorrhagica. In Banti's disease one might expect to find the fibrotic organ casting a lighter shadow than the normal spleen, but we have not seen such a case. It is conceivable that tumor, abscess, infarct or cyst of the spleen might be demonstrable. Accessory spleens are easily "visualized."

SUMMARY AND CONCLUSIONS

Hepatosplenography with thorium dioxide sol may not be without remote danger, owing to radioactivity.



Fig. 12.—Myeloid leukemia, with enlarged spleen: *a*, of less than normal density.

Its value, however, as an aid in the diagnosis of diseases of the liver and spleen has been amply demonstrated. In the 100 cases which form the basis of this report, serious immediate and remote (after two and a half years) ill effects have not been observed.

The method is of value as follows:

1. In detecting the nature of a mass in the upper part of the abdomen.

2. To determine the presence and kind of hepatic disease (atrophic cirrhosis, hypertrophic cirrhosis, syphilis of the liver, metastatic malignant lesions, primary tumor, abscess, cyst and amyloidosis).
3. To ascertain whether metastatic lesions are present in the liver if operation is contemplated for cancer.
4. To demonstrate rupture of the liver or spleen.
5. To determine the cause of jaundice (whether intrahepatic or due to obstruction of the common bile duct).
6. To follow the progress of hepatic or splenic disease.
7. To demonstrate whether a lesion is above or below the diaphragm.
8. To diagnose ascites.
9. To study diseases of the spleen.

PRIMARY STAPHYLOCOCCIC PNEUMONIA

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MINNEAPOLIS

Increase in knowledge of acute bacterial pulmonary disease requires a revision in the terminology of lung infections. Anatomic or descriptive terms such as lobar, lobular, croupous, fibrinous or catarrhal pneumonia are no longer acceptable and will become as obsolete as the designation "enteric fever." It is not of much importance clinically, for example, whether in enteritis the ulcers are present solely in the ileum or in the colon, but it is extremely important whether the disease is due to the typhoid bacillus or to *Endamoeba histolytica*. Similarly, it is of no great moment from the standpoint of specific prophylaxis, therapy or prognosis whether the lesion in pneumonia is in the alveoli or in the interstitial tissue, but it is of great importance whether the infection is due to the type I pneumococcus or the staphylococcus. In other words, etiologic diagnoses must eventually supplant anatomic diagnoses.

It is surprising that the term "bronchopneumonia" is still used to cover a variety of infections, although over forty years ago, during the influenza pandemic of 1889, Netter¹ and others found pure cultures of various organisms in a high percentage of cases, indicating that specific diagnosis was possible. Several difficulties have contributed to the reluctance of most clinicians to accept an etiologic basis for the diagnosis of acute pulmonary infections. In the first place, when examining the sputum, it is seldom safe to consider the organisms present as the causative agent of the pneumonia unless one form or another is constantly present, almost to the exclusion of all others. Secondly, there is a natural reluctance to perform routine lung puncture to determine the organisms present in the pneumonic area. Thirdly, the development in the blood of specific agglutinins for the causative organisms, which was so important a factor in the recognition and differentiation of bacillary diseases of the gastro-intestinal tract, does not as a rule occur in pulmonary infections due to various cocci. Lastly, it is possible that the difficulties involved in the control of epidemic air-borne diseases such as

pneumonia, even if the etiologic factors were known, as compared with the relative ease of controlling food-borne gastro-intestinal infections, have further tended to lessen interest in this field.

If progress is to be made in the specific prophylaxis and therapy of primary acute pulmonary infections similar to the progress that has been made in regard to acute intestinal infections since their recognition as specific etiologic entities, as Cole² emphasizes, it will be necessary to regard all cases of pneumonia in the light of the causative agent. When this is accomplished, the development of specific prophylaxis and therapy will be greatly facilitated. Chiefly through the efforts of Cole have attempts again been made to classify acute pulmonary infections on an etiologic basis. Thus, typical lobar, croupous or fibrinous pneumonia becomes type I, II or III pneumococcus lobar pneumonia. Primary bronchopneumonia or lobular or catarrhal pneumonia is classified broadly as "atypical" pneumonia to distinguish it from typical lobar pneumonia, and specifically as pneumococcic (usually group IV), streptococcic, influenza bacillus, staphylococcic, Friedländer bacillus, plague pneumonia, and so forth, depending on the causative organism. By this method of classification confusion is obviated, since, for example, type III or group IV pneumococci may give rise to inflammation which clinically or anatomically may be classed either as lobar pneumonia or as bronchopneumonia. Any organisms associated with bronchopneumonia may occasionally produce inflammation limited to one lobe, which, anatomically speaking, would be considered by some as lobar pneumonia.

Adequate clinical and pathologic descriptions are available for pneumococcic lobar pneumonia and for pneumonia due to group IV pneumococci and streptococci. Much less attention has been given to primary bronchogenic staphylococcic pneumonia, and for this reason the following cases are presented.

Staphylococcic infection of the lung characterized by sudden onset, remittent fever, purulent sputum and abscess formation was described in 1904 by Fraenkel.³ He isolated the staphylococcus in pure culture directly from the lung of a patient whose clinical course closely resembled that of case 1 in this report. Fraenkel also observed multiple lung abscesses in many fatal cases of "influenzal pneumonia." The small abscesses tended to become confluent if the patient lived long enough. Because of the rapidly fatal course of most cases, the condition was seldom diagnosed. Even before 1900, Weichselbaum, Pfeiffer, Ribbert, Marchand and Leichtenstern⁴ noted the frequency with which "influenzal pneumonia" terminated in abscess formation. Staphylococcic pneumonia in epidemic form was described in 1919 by Chickering and Park,⁵ who reported 153 cases. Most of their patients were ill with influenza before the development of pneumonia. The onset of the pneumonia was usually gradual. The clinical course was severe and was characterized by peculiar cyanosis, a dirty pink, purulent sputum, often a leukopenia and a high mortality rate. At necropsy, the characteristic observations were the presence of numerous miliary or microscopic abscesses. If the patient lived long enough,

2. Cole, R. I.: Acute Pulmonary Infections, De Lamar Lectures, 1927-1928.

3. Fraenkel, A.: Spezielle Pathologie und Therapie der Lungenkrankheiten, Berlin, Urban and Schwarzenberg, 1904, pp. 340, 534 and 536.

4. Leichtenstern, O.: Influenza, in Nothnagel's Encyclopedia of Practical Medicine, American edition, Saunders Company, 1905, p. 633.

5. Chickering, H. T., and Park, J. H.: Staphylococcus Aureus Pneumonia, J. A. M. A. 72: 617 (March 1) 1919.

From the Department of Medicine, University Hospital, University of Minnesota Medical School.

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Netter: Etude bactériologique de la bronchopneumonie, Arch. de méd. expér. et d'anat. path. 4: 28, 1892.

multiple large coalescent abscess cavities were found to be present.

In Cole's² series of 211 cases of primary atypical pneumonia, 19 (9 per cent) were associated with the staphylococcus. The clinical picture of his cases agreed in general with those described by Chickering. Habbe,⁶ who made cultures at necropsy from the lungs of 270 cases of pneumonia, isolated the staphylococcus in pure culture from 5 and in association with pneumococci in 4 of 131 cases of "croupous" pneumonia. Out of ninety-three cases of "bronchopneumonia" the staphylococcus was found in pure culture in thirteen cases and mixed with other organisms in eight cases. In "grip pneumonia" the staphylococcus was present in eight of twenty cases (40 per cent) in pure culture and in combination with other



Fig. 1 (case 1, tenth day).—Fairly dense consolidation of the upper portion of the left lung, showing numerous rarefied areas.

bacteria in five others. Out of twenty cases of "whooping cough pneumonia," the staphylococcus was isolated from two. The terminology used by Habbe in classifying pneumonia as croupous pneumonia, bronchopneumonia, grip pneumonia and whooping cough pneumonia, each in turn associated with a variety of bacteria, further emphasizes the confusion of nomenclature and the need for classification on an etiologic basis alone.

Other publications also show the relative incidence of staphylococcal infections of the lung. Lyon⁷ made lung punctures in eighteen cases of bronchopneumonia in children. The staphylococcus was isolated in pure culture from four and in combination with other bacteria from two. Lyon considered the staphylococcus as the important agent in bronchopneumonia in 9.6 per cent of his cases and with a death rate of 80 per cent. Menten⁸ found the staphylococcus alone in 11 cases and mixed with other bacteria in 65 instances during bacteriologic studies of the lungs of 131 cases of pneumonia in children at necropsy. Gundel⁹ found staphylococci mixed with other bacteria in 7 of 102 cases of bronchopneumonia at necropsy. These recent studies show that the incidence of staphylococcal lung infection has not changed materially since Netter's report in

1892, in which he found the staphylococcus in pure culture in 7.7 per cent of his cases.

From the studies thus far reported, it appears that primary staphylococcal infections of the lung are by no means rare. Heretofore, but little interest has been devoted to the differentiation of staphylococcal pneumonia from other forms of bronchopneumonia. With further study, however, it becomes evident that certain distinct differences occur, differences as characteristic as the features which permit distinction between typhoid and paratyphoid fever or between type I and type III lobar pneumonia. The association of certain clinical features with roentgenographic and bacteriologic evidence made it possible to recognize early in the course of the infection four of the six cases the report of which follows:

REPORT OF CASES

CASE 1.—W. Z., a man, aged 30, admitted to the hospital, Aug. 17, 1931, on the tenth day of illness, complained of cough, chills and pain in the left side of the chest. He had had asthma every summer for the past six years, lasting about two months each time. August 7, the asthma became so severe that the patient had to go to bed. The next day he suffered a severe chill, followed by perspiration. Cough and blood-streaked sputum appeared the following day. A sharp pain in the left axillary region developed, which was aggravated by coughing. The pain lasted two or three days. There was no marked change in his condition until he entered the hospital.

At the time of admission he appeared to be quite ill, showed evidence of considerable loss of weight and was dyspnoic. Examination of the chest revealed decreased tactile fremitus, dullness with bronchial breath sounds and coarse râles in the left posterior part of the chest between the levels of the third and eighth vertebrae. Roentgen study (Dr. Rigler) revealed evidence of fairly dense consolidation in the entire upper portion of the left lung containing numerous rarefied areas, which may represent resolving lobar pneumonia (fig. 1). There were 9,800 leukocytes. The sputum (200 cc.) settled in three layers; thick purulent material on top was underlaid by a thin layer of pinkish fluid; at the bottom were coarse particles. Microscopically there were pus cells, detritus and numerous gram-positive cocci, predominantly staphylococci. A sputum culture revealed a pure growth of hemolytic staphylococci.

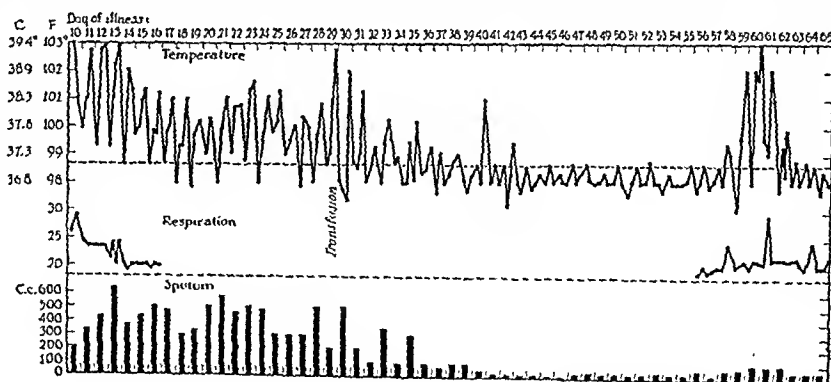


Fig. 2.—Hospital record of case 1, showing relapse on the fifty-eighth day.

For about nineteen days there were no marked changes in the clinical condition. The leukocytes increased to 15,000 and 17,000. He perspired freely, raised varying amounts of sputum and showed a remittent type of fever, as shown in figure 2. The sputum changed from pinkish to brownish, and hemolytic staphylococci in almost pure growth were again cultivated. Postural drainage did not increase the quantity of sputum. The patient appeared exhausted. A blood culture was sterile. A roentgen report, August 20, stated that the rarefied areas undoubtedly represented multiple abscesses with resolving pneumonia.

6. Habbe, Karl: Zur Bakteriologie bei Lungenentzündungen des Menschen, Deutsche med. Wochenschr. 55: 1506 (Sept. 6) 1929.

7. Lyon, A. B.: Bacteriologic Studies of 165 Cases of Pneumonia and Postpneumonic Empyema in Infants and Children, Am. J. Dis. Child. 23: 72 (Jan.) 1922.

8. Menten, Maude L.; Bailey, Sadie F., and DeBane, Frances M.: Pneumonia in Children, J. Infect. Dis. 51: 254 (Sept.-Oct.) 1932.

9. Gundel, M., and Linden, H.: Bakteriologische Untersuchungen an Leichenlungen unter besonderer Berücksichtigung ihrer Bedeutung für das pneumonie Problem, Ztschr. f. Hyg. u. Infektionskr. 112: 623, 1931.

September 5 (twenty-ninth day), the physical signs indicated a spread of the process to the left base and also to the right lung. Roentgen study revealed that the cavities had increased in size in the left lung and that a definite infiltration appeared in the right upper lobe, showing beginning cavitation (fig. 3). The temperature gradually diminished and remained at the normal after September 18 (forty-second day) except for an exacerbation, October 4, lasting six days, with severe pain in the right side of the chest and an increase of sputum. At this



Fig. 3 (case 1, twenty-ninth day).—Extensive abscess formation in the left lung. At the apex of the left lower lobe is a cavity containing fluid. There is definite infiltration of the right upper lobe and a cavity at the level of the third rib.

time there were pectoriloquy, bronchial breathing and coarse râles in a small area in the right infraclavicular space. Roentgenograms revealed a marked increase in the extent of infiltration in the right upper lobe with cavity formation. There was considerable resolution in the density of the left lung, but cavities were still present (fig. 4).

The patient thereafter improved rapidly and gained 23 pounds (10.4 Kg.). At the time of his release, dulness was still present with crackling râles, and he raised from 20 to 40 cc. of sputum. A roentgenogram showed marked

resolution of the infiltration in the right lung. The left side was not markedly changed. The patient was in only fair health for a year thereafter. He complained of weakness and dyspnea on exertion, but there was no cough, sputum, fever or loss of weight. A roentgenogram showed that the entire portion of the left upper lobe was replaced by what appeared to be a large thin-walled cavity or cyst. The cavities below this area and those in the right upper lobe were apparently replaced by rather dense scar tissue.

The following case occurred during an epidemic of an influenza-like infection:

CASE 2 (courtesy of Dr. H. S. Diehl, Student Health Service).—F. S., a man, aged 22, noted a sudden onset of high fever, weakness and malaise, a sense of oppression over the chest, aching eyeballs and a stiff feeling of the throat, Feb. 15, 1932. There was no coryza or cough. He was admitted to the hospital the next day perspiring and coughing occasionally. There was evidence of beginning pneumonia in the right base by physical and roentgen examination on the second day of illness. The leukocytes numbered 7,500. Three days later there was labored breathing and evidence of consolidation over the pneumonic area and marked increase of tactile fremitus. He coughed moderately and raised a small amount of bloody sputum. The leukocytes numbered 6,300. The roentgenogram revealed coalescent pneumonia. The fever was remittent, as shown in figure 5. February 19, the fourth day of illness, the cough became worse and was accompanied by a small amount of thick, rusty sputum. Cyanosis appeared and the patient became worse with evidence of spread of the infection to the left lung. The respirations became labored and shallow. A change in position induced a paroxysm of coughing. The leukocytes increased to 13,000 and the cyanosis increased in intensity. There was but little change during the next seven days. He had a slight chill on one occasion; the cyanosis was persistent, the leukocytes varied from 15,000 to 20,000, the cough was usually unproductive and he perspired freely. Roentgen examination revealed extensive bilateral pneumonia. March 1, the fifteenth day of illness, the cough and sputum increased. Practically no organisms except staphylococci were

seen in a sputum smear. On the following day he raised 60 cc. of sputum and a roentgenogram showed rarefactions suggesting cavity formation in the pneumonic areas in both bases, especially on the right. The leukocytes numbered 24,000. The cyanosis deepened and the pulse rate increased (fig. 5). Prostration was marked. The physical signs showed evidence of consolidation in the left base; over the right base there was a decrease of the intensity of the breath sounds and a decrease of tactile fremitus. March 5, severe pain developed in the right anterior part of the chest. The sputum still showed a great predominance of staphylococci. Then, after two large swings, the temperature remained normal and the patient recovered.

In the two foregoing cases, a diagnosis of staphylococcic pneumonia was made during the second week after a consideration of the clinical course together with the bacteriologic and roentgenographic observations. Familiarity with the infection permitted an earlier diagnosis in the two following cases:

CASE 3.—C. G., a man, aged 24, "caught cold," Sept. 27, 1932. The cold became worse but did not confine him to bed. October 1, he awoke with an aching in his shoulder and left side. The following day he became worse; the pain and cough increased, accompanied by dizziness and nausea. He was admitted to the Student Health Service, October 3, with a diagnosis of acute infection of the upper respiratory tract. His temperature was 37.8 C. (100 F.); pulse, 80, and respiration rate, 18 per minute. There was slight cough but no sputum. On physical examination there was evidence of pharyngitis. Numerous râles were heard in the left lower lobe posteriorly, especially on deep respiration. There was no impairment of resonance or other abnormal signs. There were 19,000 leukocytes in the blood, 81 per cent of which were polymorphonuclear cells. A roentgen examination showed patchy areas in the left lower lobe indicative of beginning pneumonia (fig. 6).

October 4, he complained of a sharp pain in the left side of his chest, lasting perhaps three hours. He perspired quite freely. The pleuritic pain recurred at intervals for the next week. By October 6 the physical signs showed impaired resonance with suppressed breath sounds in the left lower lobe. Roentgen examination showed a spread of the process throughout the whole lower lobe. The leukocytes increased to 22,000. He began to raise 1 or 2 cc. of sputum during severe coughing spells after waking in the morning. He perspired profusely at times. October 8, blowing breath sounds and whispered pectoriloquy were noted.

The general condition remained unchanged for several days. The patient complained only of weakness, occasional chest pains and a cough. He did not appear to be very ill at any time and his appetite was good.

The fever was of the remittent type, as illustrated in figure 7. The sputum, October 11, was small in amount, thick, tenacious and greenish yellow. A smear showed staphylococci almost to the exclusion of other organisms (fig. 8). A blood agar plate culture yielded a great predominance of hemolytic staphylococcus colonies. From this finding, staphylococcic pneumonia was suspected. The patient at this time was cyanotic but otherwise did not appear to be very ill. Over the left lower lung posteriorly



Fig. 4 (case 1, fifty-eighth day).—Considerable clearing of the left side of the chest but with multiple cavities evident. Marked increase of density in the right lung with multiple cavities.

there were dulness with diminished tactile fremitus, loud, high-pitched tubular breath sounds with an amphoric quality, loud pectoriloquy and egophony, indicating cavity formation. A diagnosis of staphylococcic pneumonia with abscess and cavity formation was made and confirmed by a roentgenogram, which showed several areas of rarefaction in the previously homoge-

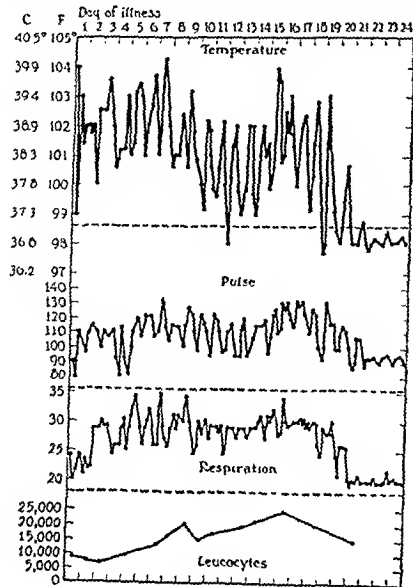


Fig. 5.—Complete record of case 2, from the first day of illness.

neous shadow in the left lower lobe (fig. 9). Examinations of the sputum for several days showed great masses of staphylococci. Blood cultures were sterile. The pleuritic pain persisted.

October 19 (seventeenth day) there was flatness on percussion in the left base, diminished to absent breath sounds and absent tactile fremitus. Fluid was suspected and confirmed by roentgen examination; 350 cc. of sterile, yellow, turbid fluid containing cell debris but no bacteria was removed. Thereafter, the temperature diminished and recovery was uneventful.

CASE 4 (observed at another hospital through the courtesy of Dr. B. B. Souster).—A. O., a student nurse, aged 22, awakened, April 2, 1933, with a sore throat. She went on duty but became hoarse and finally aphonic. In the afternoon she felt quite ill and her temperature was recorded as 100.4. Toward evening she went to bed and had a mild chill. She remained about the same on the following day except that severe pain, especially on breathing or coughing, developed in the right side of the chest and shoulder. The pain persisted, and on the third day impaired resonance in the right base posteriorly was detected. She raised some sputum, which contained many gram-positive cocci, singly and in clusters. A roentgenogram revealed marked infiltration in the lower half of the right side of the chest. The leukocytes numbered 12,600. On the fourth day the patient raised some blood-streaked sputum. The temperature was remittent, as shown in figure 10. Slight cyanosis and dyspnea were noted. A sample of sputum was sent to me for examination on the fifth day. It was odorless, brownish and tenacious, with flecks of fresh blood. A stained smear revealed numerous gram-positive cocci. A great predominance of nonhemolytic staphylococci and a few pneumococcus and hemolytic streptococcus colonies grew on a blood agar plate. A portion was injected intraperitoneally into a mouse, which was examined after five hours. A few gram-positive cocci were recovered from the peritoneum, and culture of the heart blood revealed a pure growth of staphylococci. Another sample of sputum received on the sixth day was more purulent and again contained a great predominance of slightly hemolytic staphylococci. A diagnosis of staphylococcic pneumonia was suggested. On examination of the patient, I found hyperresonance in the right upper anterior part of the chest, signs of fluid in the right lower part of the chest, and in a small area in the right interscapular region there were diminished

bronchial breath sounds and whispered pectoriloquy. The patient had a peculiar dusky cyanosis and appeared to be quite ill. She coughed occasionally and raised a small amount of sputum. A roentgenogram taken on the fifth day showed a spread of the process extending now into the upper lobe. There was evidence of pleural effusion and numerous small rarefied areas. By thoracentesis a small amount of blood-tinged fluid was obtained, which on smear and culture showed a pure culture of hemolytic staphylococci. An oxygen tent was used with benefit.

There was some improvement for the next few days. The pain in the chest diminished, and friction sounds were present. Herpes appeared on the upper lip. There was some perspiration, though not excessive. The leukocytes increased to 23,000. On the eleventh day I found a small area in the right intrascapular area, in which distinct amphoric breath sounds and pectoriloquy were heard, suggesting cavity formation, which was confirmed by a roentgenogram. Pleural fluid partly obscured the typical physical and roentgen observations of cavity formation. Although the patient looked considerably better, she complained of the bad taste and odor of the sputum. On the thirteenth day she raised over 30 cc. of foul sputum after a severe coughing spell and commenced having drenching sweats. Several roentgenograms during the next few days showed the development and enlargement of numerous cavities and a diminution in the amount of pleural fluid. The sputum was a foul, homogeneous, milky fluid containing myriads of staphylococci and a few other organisms, including fusiform and spiral forms. The quantity of sputum raised is shown in figure 10. Later, roentgenograms revealed the coalescence of several small cavities into larger ones, with a gradual diminution of the parenchymal infiltration. There were paroxysms of coughing. Three blood cultures taken at intervals were all sterile. On the twenty-fourth day a tender, fluctuating area appeared in the lower right posterior axillary line. This was incised and a small amount of pus drained for several days. The pus contained a pure culture of hemolytic staphylococci. Following this procedure the temperature returned to normal and uneventful recovery ensued.

CASE 4 illustrates the rapid onset of staphylococcic infection of the lung following a sore throat. Evidence of pneumonia appeared on the third day. Staphylococcic pneumonia was suggested on the fifth day because of the great predominance of staphylococci in the sputum, the type of fever and the x-ray evidence of cavity formation. The abscesses enlarged, coalesced and evidently evacuated themselves through the bronchi. The odor of the sputum was evidently from a superimposed mixed infection due to communication

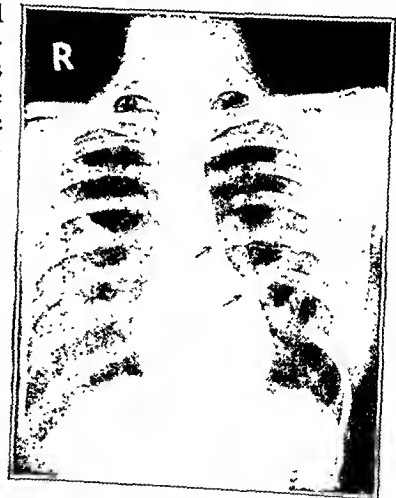


Fig. 6 (case 3, first day of illness).—Patchy areas of density along the left border of the heart, suggestive of beginning pneumonia.

with the bronchi, as in true lung abscess. Empyema complicated the case. Later roentgenograms showed a diminution in the size of the cavities and their final disappearance. Curiously, this patient, as patient 3, did not appear very ill after the first few days.

The following two fatal cases were considered as primary bronchogenic staphylococcic pneumonia com-

plicating long standing conditions which presumably lowered the resistance to infection. The cases were treated in other services in this hospital and the diagnoses were made at necropsy.

CASE 5.—Mrs. M. L., aged 38, three months pregnant, was admitted to the obstetric service, Jan. 11, 1931, complaining of weakness, anorexia and fatigue. The case was essentially one

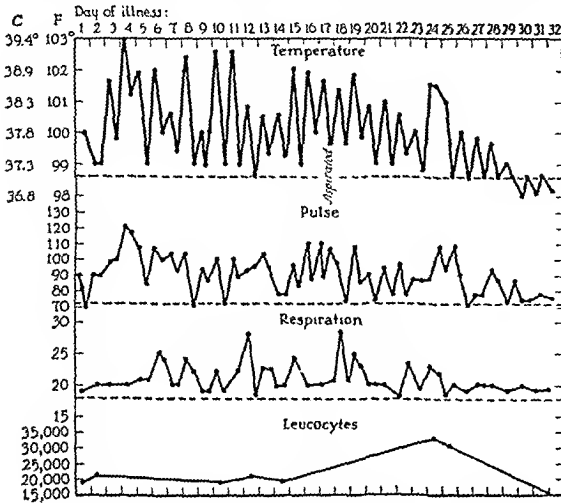


Fig. 7.—Complete record of case 3, from the first day of illness.

of chronic glomerulonephritis approaching uremia. Two days after admission spontaneous complete abortion occurred, after which the patient felt better. There was no marked change in her condition until seven days later, when the temperature rose to 37.7 C. (99.8 F.) and then dropped to normal. Two days after this there was again fever of 37.7 C., but no unusual symptoms were noted. Thereafter, the temperature fluctuated between 37.3 C. (99 F.) and 37.8 C. (100 F.) for six days, until two days before death, when it rose to 38.4 C. (101.2 F.). The day before death, sharp pain developed in the right lower axilla, accompanied by fine and coarse râles in this area. The

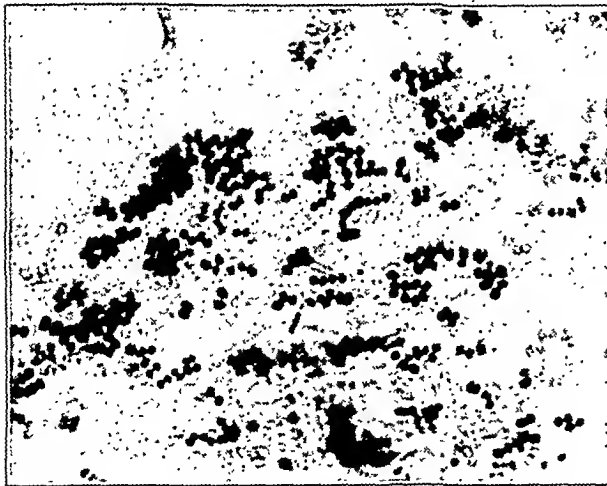


Fig. 8 (case 3).—Gram stain of sputum showing predominance of cocci, morphologically staphylococci. A culture of this sample of sputum revealed a great predominance of hemolytic staphylococcus colonies.

patient became worse and vomited, and the respiration rate increased until death, January 31. The right lung weighed 700 Gm. There was marked congestion and edema and a few areas of consolidation containing minute abscesses.¹⁰ The left

lung weighed 1,000 Gm. and showed numerous small abscess-like areas, especially in the upper lobe, from which pure cultures of staphylococci were obtained. Other evidence of staphylococcal infection was not found elsewhere in the body. The remaining observations were the usual changes of nephritis.

Histologic sections (Dr. J. S. McCartney) from various portions of the pneumonic area showed for the most part a coalescent pneumonia with abscess formation, as shown in figure 11. The majority of the alveoli were filled with polymorphonuclear leukocytes and erythrocytes. Some alveoli contained homogeneous, faintly stained precipitated serum and a few leukocytes. Other alveoli contained numerous threads of fibrin. Scattered irregularly throughout the sections were numerous areas of necrosis with disappearance of the alveolar septums, indicating abscess formation. In and near these abscesses were dense masses of cocci, as shown in figure 12.

CASE 6.—O. P., aged 3 months, was admitted to the pediatric service because of repeated convulsions, difficulty in feeding and loss of weight. The infant was in poor condition but on dietary regulation gained constantly in weight during fifty-three days of observation. During this time convulsions continually occurred in spite of all treatment. Suddenly, on the fifty-fourth day, the temperature rose to 40 C. (104 F.). The fever continued, though it was slightly lower until death eight days later. Pneumonia was not evident until the seventh day after the onset of fever, when a roentgenogram revealed increased density in the right upper lobe. At this time a cough developed. A smear and culture from the secretions in the throat showed a great predominance of staphylococci. Later, roentgenograms showed consolidation in the right upper lobe. Tracheal râles and cyanosis appeared. The condition became worse and the infant died.



Fig. 9 (case 3, ninth day).—Diffuse infiltration of the left base containing several areas of rarefaction suggestive of multiple abscess cavities.

At autopsy there was evidence of a pneumonic process in the whole right lung and in the lower lobe of the left lung. The bronchi contained exudate. Staphylococci were recovered in pure culture on blood agar plates from the consolidated areas and from the bronchial exudate. The remaining pathologic report bears no relation to the pneumonia and need not be cited.

The histologic sections were almost identical with those in case 5 except that atelectatic areas and purulent bronchitis were present. Consolidated areas, edema and abscesses containing large masses of cocci, morphologically staphylococci, were found.

COMMENT

These cases are presented as primary, bronchogenic, staphylococcal infections of the lung, imposed secondarily on some condition which presumably depressed the defense mechanism. There is every reason to believe, as Chickering suggests, that the staphylococci invading the lung came from those residing normally as saprophytes in the secretions of the upper respiratory tract. The possibility of exogenous infection must also be borne in mind. It is probably seldom that these organisms become pathogenic unless the soil is prepared, so to speak, by some preexisting condition. In case 1 the predisposing factor seemed to be asthmatic bronchitis; in cases 2 and 3, an influenza-like infection;

10. Opie, E. L.; Blake, F. G.; Small, J. C., and Rivers, T. M.: Epidemic Respiratory Disease, St. Louis, C. V. Mosby Company, 1921, pp. 112, 225 and 366. Pathology of Acute Respiratory Diseases, The Medical Department of the U. S. Army in the World War, War Department, 377, 1929.

in case 4, a sore throat; in case 5, chronic nephritis, and in the last case, malnutrition and convulsions. In this connection, the recent studies of McCordock and Muckenfuss¹¹ are of interest. These observers produced multiple lung abscesses experimentally in rabbits by the injection of vaccine virus and staphylococci. Virus alone or staphylococci alone did not give rise to abscess formation in the lung. They believed that the pneumonia caused by the vaccine virus prepared the field for the growth of the injected staphylococci.

Staphylococcic pneumonia occurs more commonly than is generally assumed. In this hospital, 5 cases occurred among 110 cases diagnosed as "bronchopneumonia," including "postoperative" and "secondary" pneumonias, during the year 1931-1932. A clearer conception of the incidence was obtained from statistics covering the same period, prepared in the Student Health Service by Dr. H. S. Diehl. Among 12,000 university students, 6,200 cases of acute infections of the respiratory tract were reported. Five hundred and nine cases were severe enough to require hospitalization. Pneumonia developed in twenty-two of these, among which were two of the cases of staphylococcic

itself is only one factor in the diagnosis, since staphylococci may predominate in sputum in other conditions as well. Staphylococci were not found in the blood of any of my patients.

The usual signs of bronchopneumonia described in textbooks were present until the development of cavities large enough to produce amphoric breath

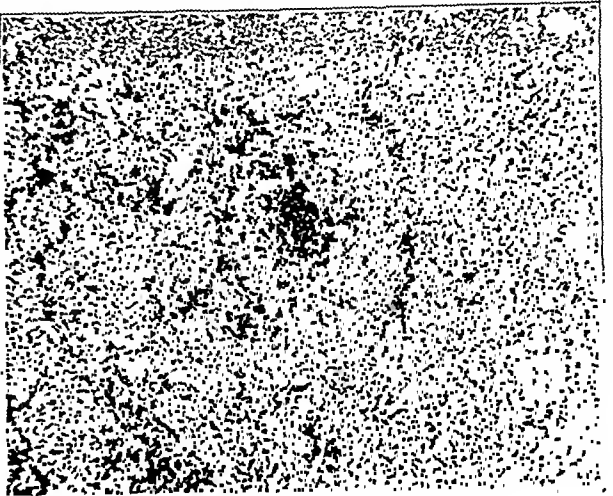


Fig. 11 (case 5).—Microscopic lung abscess.

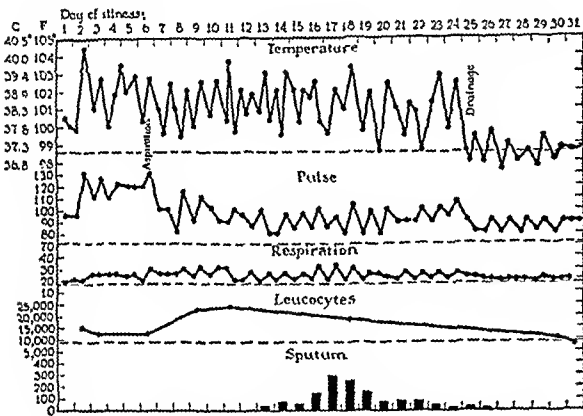


Fig. 10.—Complete record of case 4, from the first day of illness.

pneumonia here reported. Thus, in this small series, the incidence is the same (9 per cent) as in Lyon's report and in Cole's series of 211 cases of primary atypical pneumonia.

Several features characterize staphylococcic pneumonia as an entity. The onset usually occurs during some other condition and may be sudden, with chills and high fever. In Chickering's cases the onset was usually insidious, merging into the preexisting influenza. The fever is of the remittent type characteristic of staphylococcic infection elsewhere in the body. Chills and perspiration may occur throughout the illness. Cyanosis is usually marked and may be of the peculiar reddish hue described by Chickering. The pulse and respiration rate are usually increased. The leukocyte count is variable. An early leukopenia is probably partly influenced by the preexisting infection. Later, the leukocytes increase in number. In our series, the sputum was usually odorless, thick, purulent and yellow green but occasionally pinkish. The presence of great numbers of staphylococci in the sputum served as the clue to the diagnosis of four cases. When the sputum was plated, staphylococcus colonies vastly outnumbered those of other forms of bacteria. This in

sounds, coarse râles and characteristic changes in voice sounds. The formation of abscesses large enough to be detected by physical examination or by x-rays developed at different rates in different cases. As a rule, as Fraenkel and Cole observed, abscesses develop in patients who live long enough. In case 4, large abscesses were evident by the fifth day. In case 6, diffusely scattered miliary abscesses were present on examination



Fig. 12.—Section of lung tissue stained for bacteria showing dense masses of cocci in an abscess.

of the lung twenty days after the apparent onset of infection. It is, however, not possible to date the onset of staphylococcic infection in many cases with certainty. Roentgenographic evidence indicated the complete disappearance of cavities and healing in cases 2, 3 and 4. In case 1 a single large thin walled cavity developed in one area previously involved by the infection, furnishing a potential site for chronic infection.

11. McCordock, H. A., and Muckenfuss, R. S.: The Similarity of Virus Pneumonia in Animals to Epidemic Influenza and Interstitial Bronchopneumonia in Man, *Am. J. Path.* 9: 221 (March) 1933.

A tendency to relapse is illustrated in the record of case 1. In case 4 a typical lung abscess with foul sputum developed. This suggests the possibility of staphylococcal pneumonia as the initial stage of certain cases of chronic lung abscess. Empyema developed in cases 3 and 4.

The features that distinguish staphylococcal pneumonia from other acute infections of the lung are (1) the presence of staphylococci in the lung, (2) the predominance of staphylococci in purulent sputum in smear and culture, (3) the remittent type of fever, (4) sweating, (5) the evidence of abscess formation, and (6) a high mortality rate (although four of our six patients recovered).

The question may arise in regard to nomenclature, whether to consider the cases described as "staphylococcal pneumonia" or "multiple staphylococcal lung abscesses." Much depends on the stage of the disease in question. Early in the course, the term "staphylococcal pneumonia" is acceptable. Later, "multiple staphylococcal lung abscesses" may be desirable. The latter term might better be reserved for secondary embolic or metastatic lung abscess from staphylococcal infections elsewhere in the body.

SUMMARY

Six cases of primary staphylococcal pneumonia showed well defined clinical and pathologic characteristics. The disease in sporadic cases, and probably in most epidemic cases, presumably arises as an autogenous infection, developing when the resistance is lowered by some other infection or illness. The infection behaves much like staphylococcal infection elsewhere in the body. It is characterized by gradual or sudden onset, chills or chilliness, sweats, high remittent fever, increased pulse and respiration rates, marked cyanosis and the signs and symptoms first of bronchopneumonia, later developing signs of lung abscess. Chills and sweating may recur. The sputum is yellowish green, often pinkish, purulent and odorless, and varies greatly in amount. Staphylococci are present in overwhelming numbers in smear and culture of the sputum and from the lung. The blood leukocytes vary greatly in number. The roentgenogram is of great assistance in the detection of abscess formation before it becomes extensive enough to be recognized by physical examination. The mortality rate, especially in the epidemic form, is high. Recovery took place in four of our six sporadic cases.

ABSTRACT OF DISCUSSION

DR. LEO G. RIGLER, Minneapolis: It seems strange that in the large series of serial roentgenograms of cases of pneumonia in the past years there has been failure to observe these cases. As Dr. Reimann showed in his slides, the appearance in some cases is very striking within a few days after the onset of the disease, and characteristic of cavitation. It seems possible that serial roentgenographic studies in pneumonia may give a clue to the detection of such cases and stimulate a more intensive bacteriologic search of the sputum. There are two or three things in the differential diagnosis that perhaps explain why these cases have not been observed in previous studies. In cases of resolving lobar pneumonia, the typical stage of resolution gives a picture somewhat similar to the films shown by Dr. Reimann. The clinical course of the disease under these circumstances is entirely different, but it is obvious that these small and larger areas of rarefaction in the roentgenogram, which are due to the restoration of normal lung tissue in the midst of exudative and fibrotic lung tissue, may give the appearance of cavitation. Not infrequently a type of acute lung abscess is seen which is different from what Dr. Reimann

has described. I have seen it postoperatively, and Graham has reported a number of cases in which an acute lung abscess presented the picture of consolidation with an area of rarefaction within it, which is very similar to staphylococcal pneumonia and which also clears up spontaneously in a few weeks. Multiple chronic lung abscess also has probably led observers astray. This resembles in many respects the roentgenographic appearance of the cases which Dr. Reimann showed. The clinical course is entirely different. It is possible that many of these cases of pneumonia have been mistaken for this type of chronic lung abscess.

DR. W. D. SUTLIFF, Boston: It has been possible to get together, out of a survey of 1,067 cases of pneumonia, a small number which, while not so carefully worked up, gives the incidence of this condition from another part of the country. In this large number of cases the staphylococcus was looked for particularly at the autopsy, and was found 28 times in 307 autopsies, an incidence of about 9 per cent. This is very close to what Dr. Reimann has found. In nearly every instance another organism was found in addition to the staphylococcus. This organism in two thirds of the cases was a pneumococcus and in one third a hemolytic streptococcus. In four instances the hemolytic streptococcus, staphylococcus and pneumococcus were all present. One instance occurred in a definite type 1 lobar pneumonia. The patient was treated with specific serum and did quite well but never entirely recovered. About two weeks following the return of the temperature nearly to normal the patient failed gradually and died. A pure culture of staphylococcus was found at autopsy. The staphylococcus was the only organism isolated in four cases. In three of these it was found only postmortem. In one case, staphylococci were isolated, as Dr. Reimann has isolated them, from the sputum, from the blood, and from the organs at the postmortem examination. This group of cases indicates that staphylococcal pneumonia is to a large extent a secondary condition. It may be associated with pneumococcal pneumonia and is one of the complicating factors to be reckoned with in specific therapy.

Clinical Notes, Suggestions and New Instruments

CARCINOMA OF THE STOMACH IN THE FIRST TWO DECADES OF LIFE

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Assistant Surgeon, U. S. Public Health Service

Carcinoma of the stomach is rare in patients under 30 years of age. Before the age of 20 it is so rare that those cases which have occurred in the past have usually been the subject of individual reports. However, "No age is immune and a diagnosis relying to any degree on the 'cancer age' may lead to a fatal issue."¹

Including the case herein described, I have been able to collect from the literature a total of forty cases of cancer of the stomach occurring in the first two decades of life. In 1900, Osler and McCrae² collected six cases in the first and thirteen cases in the second decade of life.

In 1924, Sullivan³ again reviewed the subject and collected a total of twenty-one cases, omitting thirteen of the cases previously collected by Osler and McCrae, possibly because of doubtful proof of their authenticity. If one accepts both of these groups, however, there were thirty-four cases reported up to 1924.

Marble,⁴ of Johns Hopkins University, in 1931, reported a case in a 17 year old girl and collected three other cases in

1. Golob, Meyer: Age Incidence of Gastric Cancer, with Special Reference to Cancer in the Young, J. A. M. A. 80:1299 (May 5) 1923.

2. Osler, William, and McCrae, Thomas: Cancer of the Stomach. Philadelphia, P. Blakiston's Son & Co., 1900; Cancer of the Stomach in the Young, New York State J. Med. 71: 586, 1900; System of Medicine 5: 220, 1909.

3. Sullivan, R. P.: Carcinoma of the Stomach in Young People. Surg., Gynec. & Obst. 38: 283 (Sept.) 1924.

4. Marble, Alexander: Carcinoma of the Stomach in a Seventeen Year Old Girl, Bull. Johns Hopkins Hosp. 48: 39 (Jan.) 1931.

patients aged, respectively, 18, 18 and 20 years. In the past year another case was reported in a boy, aged 11 years.⁵ This group, together with the case which is here described in detail, makes a total of forty cases of cancer of the stomach reported in the first two decades of life. The review of the literature has not been exhaustive and this list may be incomplete.

The youngest patient in this group, and incidentally the one in whom the duration of illness was shortest, was an infant whose symptoms began on the tenth day of life with vomiting and obstipation. Death occurred in the fifth week and microscopic examination of a tumor found in the stomach showed cylindric cell epithelioma.⁶

In this series there were thirty-three males and seven females. Bloodgood⁷ says: "Perhaps more men have cancer of the stomach than women, because so many women get cancer of the breast and uterus first and die, that they have not the same opportunity as men have to develop cancer of the stomach." This observation is not in keeping with the even greater predominance of males seen in the younger patients.

Carcinoma of the stomach in the young is characterized by its acute onset, violent course, persistent high temperatures, early metastases and absence of cachexia.⁸ Death usually occurs in a few weeks to a few months in untreated cases. In a 17 year old girl, resection of the stomach was done with

excellent temporary results but with ultimate recurrence and death three years after the onset of symptoms. This patient lived the longest of any of those included in this group.

The result of treatment is even more discouraging than that obtained with older patients. Diagnosis comes too late for surgical intervention, and medical treatment is of necessity limited to the relief of symptoms.

Approximately 38 per cent of all cancer is cancer of the stomach, and 38,000 persons die annually in the United States from this disease.⁸ An extremely small percentage of this number occurs in patients under 20 years of age;



Fig. 1.—Negro youth, aged 20, with carcinoma of the stomach as he appeared two months before death.

yet the fact that it does occur makes it a possibility to be remembered.

In spite of the refinements in diagnosis and therapeutics, the number of five-year cures has not reached more than 10 per cent.⁷ The mortality in the younger patients has been 100 per cent. The high mortality is due largely to the failure to make early diagnoses. Long continued observation may lead to a fatal outcome, and the data which have been collected through such observation are rendered useless. When the condition is suspected, early operation is always in order. If a gumma is found, but little harm is done, and antisyphilitic treatment can be carried out with the conscience of the operator clear.

REPORT OF CASE

History.—L. N., a Negro youth, aged 20, entered the hospital, Aug. 1, 1932, complaining of pain in the stomach. Three weeks before admission he was seized with a severe burning pain in

the upper part of the abdomen, accompanied by nausea and vomiting. This attack lasted two hours and was partly relieved by an ice bag. Since that time a similar pain had recurred with increasing frequency until it had become continuous. The pain became agonizing at times and was situated in the mid-epigastrium. Food relieved the pain for from one-half to one



Fig. 2.—Outline of stomach after barium meal, showing deformity at pylorus due to carcinoma. This deformity was constant.

hour, when it recurred with great intensity and was relieved by vomiting. The vomitus contained undigested food particles and coffee ground material.

The patient had retained practically no food and he had lost 15 pounds (6.8 Kg.) during the past month. For the past few



Fig. 3.—Fluid level seen near pylorus giving the appearance of a duodenal diverticulum. This appearance was due to an enormous ulcer crater in the carcinoma mass near the pylorus, in the posterior wall of the stomach itself.

days there had been severe pain in the dorsal spine. Afternoon chills occurred with fair regularity. The bowels were sluggish.

His appetite had been poor for the past six months and he had gradually lost some weight, even previous to the time when his last illness began.

His family and personal history was negative, and he stated that he had not had syphilis.

5. Mintz, M. M.: Carcinoma of the Stomach in an Eleven Year Old Boy. *Vestnik. rentgen. i radiol.* 8: 357-360, 1930.
6. Collingsworth, C. T.: Case of Cancer of the Stomach in an Infant Five Weeks Old. *Brit. M. J.* 2: 255, 1877.
7. Bloodgood, J. C., in Lewis, Dean: *Practice of Surgery*, Hagerstown, Md., W. F. Prior Company 6: 1-107, 1929.
8. Rehfuss, M. E.: *Diseases of the Stomach*, Philadelphia, W. B. Saunders Company 28: 708-764, 1927.

Examination.—The patient was emaciated and apparently in considerable pain; he weighed 102 pounds (46.3 Kg.) and was 64 inches (162.6 cm.) tall; the temperature was 37.6 C. (99.7 F.), the pulse 90 and the blood pressure 100 systolic, 80 diastolic.

The abdomen was rather flat, and there was a suggestion of fulness in the epigastric region. The whole upper part of the abdomen was acutely tender, was rigid and was difficult to examine. A hard mass, which was palpated in the right epigastrium, was difficult to outline because of the overlying rigidity.

The laboratory reported urine, feces, sputum and Kahn tests negative; hemoglobin, 85 per cent. The fasting stomach contained 40 degrees of free hydrochloric acid with 80 degrees of total acidity, and no blood, bile, mucus or lactic acid. After an Ewald test meal, 20 degrees of free hydrochloric acid was present with a total acidity of 50 degrees.

The roentgenologist reported as follows: "Fluoroscopic and radiographic examinations of the gastro-intestinal tract reveals a constant finger print deformity of the pyloric end of the stomach, and a pouch-like projection of the first portion of

The pathologic report from the biopsy specimen was: "Lymph node is partly replaced by gland cell carcinoma which is more strikingly noticeable in the afferent channel." The diagnosis was gland cell carcinoma.

Postoperative Course.—The patient stood the operation well. He appeared to improve under frequent jejunal feedings, which were begun after the second day. The operative wound healed rapidly. At times he attempted to take fluids or gruel by mouth, but this nearly always led to vomiting. After a few weeks of apparent improvement he began to lose weight rapidly. Anemia became marked, the red blood cell count falling to 2½ million. Pain was controlled by morphine, which was given freely.

Emaciation and cachexia advanced rapidly, and during the last week of life any attempt to take fluid or nourishment by mouth was followed almost immediately by vomiting. The patient died, October 8, three months after the onset of symptoms and nine weeks after admission to the hospital. The weight at death was 79 pounds (35.8 Kg.).

The condition present at autopsy was but little changed from the observations made at operation. A few neoplastic transplants



Fig. 4.—Groups of embryonal epithelial cells in a lymph gland taken from the lesser curvature of the stomach.



Fig. 5.—Same as figure 4, with higher magnification.

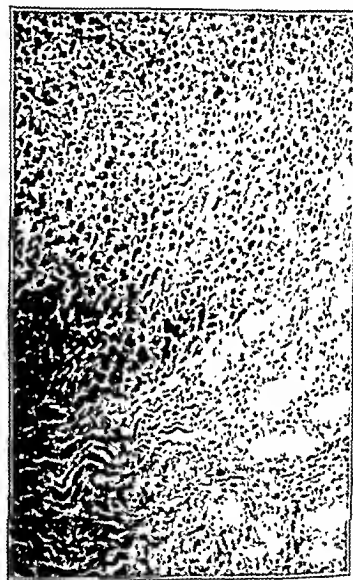


Fig. 6.—Section of stomach wall showing infiltration of neoplastic epithelial cells into parenchyma.

the duodenum. There is a forty-eight hour gastric retention. Conclusions: Pyloric neoplasm, probably carcinomatous, and diverticulum of the duodenum."

A barium enema showed no obstruction, and no filling defects were present in the large bowel.

The consultant on gastro-enterology considered the possibility of malignancy but was more inclined to suspect a syphilitic condition, in spite of the negative syphilitic history and Kahn reaction.

Operation.—Operation was advised, however, and was performed, August 18, two and a half weeks after the patient was admitted.

Under ethylene anesthesia the abdomen was entered through a high right rectus incision. The pyloric portion of the stomach was found to be infiltrated and bound down by a hard neoplastic growth, obstructing the outlet. The glands of the greater and lesser curvature of the stomach and of the mesentery, the retroperitoneal space and the hilus of the spleen were densely involved. The mesentery was so bound down as to make either anterior or posterior gastro-enterostomy impracticable. The liver was not involved. A number 18 French rubber catheter was placed in the upper part of the jejunum by Stamms' method and brought out through the abdominal wound. A neoplastic gland was removed from the mesentery for biopsy and the abdomen closed.

were present beneath the serosa of the liver, but the liver substance was not involved. The metastases appeared to follow a retrograde lymphatic course from the primary site in the stomach. The pylorus was found to be practically occluded by the hard ringlike mass. A deep ulceration on the posterior wall of the stomach near the pylorus measured 2 inches in length and 1 inch in diameter and probably gave rise to the appearance in one of the roentgenograms of a duodenal diverticulum.

Microscopic examination of the specimens confirmed the previous report of gland cell carcinoma.

SUMMARY

1. A case of carcinoma of the stomach is reported in a youth, aged 20. Thirty-nine other cases occurring in the first two decades of life are cited from the literature.
2. Carcinoma of the stomach in the first two decades of life is an extremely rare condition, but the fact that it does occur makes it a possibility to be borne in mind.
3. Early operation is advisable in doubtful cases, instead of therapeutic tests which consume valuable time. It is only in this way that it will be possible to lower the present 100 per cent mortality.

U. S. Marine Hospital.

TUBELIKE INFILTRATIVE MUCINOUS CARCINOMA OF
RECTUM IN A NINETEEN YEAR OLD PATIENT

CHARLES S. HIGLEY, M.D., CLEVELAND

This case is reported because of the unusual type of the tumor, which converted the rectum into a rigid firm tube as disclosed by clinical and pathologic examination. Karsner and Clark¹ in their review of the literature found only one direct reference to this form of tumor, that of Bensaude, Cain and Orléan.² They reported three cases, without information as to age, sex or special microscopic features, and stated that the condition was simply referred to by Bard. In their first case the lesion extended for 7 cm. at the rectosigmoid junction. In the second there was a vegetating cancer in the ampulla of the rectum which extended in tubelike form for 18 cm. above, involving posterior and lateral walls. The symptoms of the third case began as an acute dysentery and the lesion extended for 20 cm. in the rectosigmoid region. They used the descriptive phrase "un cylindre epais, rigide et dur comme du bois," a rigid tube, firm and hard as wood. In their case report they suggest the name "cancer infiltrant et en coulée." This means an infiltrating, sleeve-like cancer and describes the elongated annular constriction of the lumen of the rectum. They found no clinical characteristics except those found on digital examination and believed that extension along the lymphatics played an essential rôle in the production of the deformity.

REPORT OF CASE

History.—V. S., a man, aged 19, Italian, a barber, admitted to the medical department of City Hospital, Nov. 19, 1932, complained chiefly of diarrhea and pain in the left lower quadrant. The present illness dated from two weeks before admission, but on close questioning he recalled that six months before admission his stools were occasionally blood streaked. He also recalled that four months before admission there had been a decrease in the caliber of the stool and some pain on defecation. Two weeks previous to admission the patient ate some highly seasoned food and soon afterward severe abdominal cramps developed. He took several doses of saline cathartics in the next two days in an effort to relieve the abdominal symptoms and subsequently passed at frequent intervals liquid stools, which contained blood and mucus. The diarrhea gradually diminished and on admission he was having only about four stools daily. However, the pain in the left lower quadrant persisted. The past history was not significant except for gonorrheal urethritis in 1930.

Examination.—The patient was well nourished and well developed. He was intelligent and cooperative and did not seem severely ill. The pupils reacted to light and in accommodation, and the heart and lungs were apparently normal. The abdomen showed marked tenderness to palpation in the left lower quadrant, and on deep palpation several tender walnut sized masses were felt in this region. Rectal examination showed the lumen to be narrowed by a firm annular mass, which extended from about 2.5 cm. above the anus to as far as the finger could reach. It was not tender, and no bleeding resulted from the digital examination. The rectal wall felt smooth and regular. Proctoscopic examination showed a uniform narrowing of the lumen. The mucosa was gray and finely granular in appearance. There were several minute areas of ulceration, which bled easily. A biopsy of one of these areas was done.

A laboratory examination revealed: red blood count, 3,800,000; hemoglobin, 70 per cent; white blood count, 9,500; differential count, normal. The blood Wassermann reaction was negative. The feces were brown, semisolid and contained gross blood. The biopsy showed mucinous carcinoma. A roentgenographic study of the colon revealed an annular constriction about 6 cm. long just above the ampulla of the rectum.

Course.—A diagnosis of carcinoma of the rectum was made and the patient was transferred to the surgical department. December 3, an exploratory laparotomy was done under gas anesthesia by Dr. D. M. Glover. A low rectus muscle incision was made and the peritoneal cavity was opened. No free

fluid was present. There was a large mass involving the rectum and adjacent lymph nodes. The tumor was obviously inoperable and a colostomy was done. The postoperative condition of the patient was good. On the sixth day after operation the colostomy was opened. The intestinal loop was divided with a cautery at 11:15 a. m. and the patient was able to take his noon and evening meals. At 8:15 p. m. he suddenly complained of severe pain in the right side of the chest and became dyspneic and cyanotic. The respirations rose to 60 per minute, the pulse to 140 per minute and the systolic blood pressure dropped to 80 mm. of mercury. The diagnosis of pulmonary embolus was made. The patient died at 8:30 p. m.

The autopsy was performed thirteen hours after death by Dr. R. J. Williams. In the pelvis was a nodular mass, measuring 13.5 cm. in length and 10 cm. in diameter, which included the entire rectum and the distal portion of the sigmoid, as illustrated. It was firmly attached to the posterior pelvic wall and was removed with difficulty. On section, the lumen of the



Rectum and distal portion of sigmoid, showing tubelike infiltration by mucinous carcinoma.

rectum was seen to be markedly narrowed by surrounding tumor tissue, which completely encircled the rectal wall. The cut surface of the tumor mass appeared grayish white and had a gelatinous and shiny appearance. The tumor showed three well defined areas: an innermost striated layer measuring 3 to 4 mm. in width, which had striations running in the transverse diameter of the intestine; distal to this a layer measuring 2 cm. in width, which ran longitudinally and was gray and opaque; the distal layer, composed of frank tumor tissue and from 2.5 to 4 cm. in thickness and having a shiny, gelatinous appearance. Beneath the serosa on the anterior surface of the rectum and sigmoid were numerous gray-white, elevated nodules measuring up to 2 cm. in diameter.

The mucosa of the rectum and distal portion of the sigmoid showed an area of ulceration, which began 3.5 cm. from the distal portion of the rectum and extended proximally for a distance of 8 cm. This area had a gray granular appearance and the margins were irregular and elevated from 1 to 2 mm. above the surrounding rectal mucosa. The mucosa of the sigmoid proximal to the tumor was smooth and velvety. The circumference of the normal sigmoid was 8.5 cm.; the circumference of the rectum distal to the tumor, 9 cm. The involved portion of the rectum had a uniform circumference of 6 cm.

From the Departments of Pathology and Medicine, City Hospital.
1. Karsner, H. T., and Clark, Burton, Jr.: Analysis of 104 Cases of Carcinoma of the Large Intestine. *Am. J. Cancer* 16:935 (Sept.) 1932.
2. Bensaude, Cain and Orléan: Sur une forme rare d'épithélioma colloïde rectosigmoïdien; le cancer infiltrant et en coulée. *Arch. d. mal. de l'app. digestif* 21:749 (June) 1931.

Microscopic examination of biopsy and autopsy specimens showed loss of surface epithelium with fibrosis of tunica propria, associated with infiltration of a few polymorphonuclear leukocytes, lymphocytes, plasma cells and large mononuclears. The crypts were elongated and somewhat tortuous, with goblet cell lining. There was no transition in character of epithelium or structure to tumor. In the mucosa were several masses of signet ring cells irregularly outlined, poorly defined and without acinus formation. These penetrated the muscularis and were continuous with the main tumor mass. This showed coarse and fine bands of mature connective tissue, which supported acinus-like masses of stringy, basophilic mucin. These varied greatly as to size and outline. In a few instances small masses of condensed cells were found in the acini, but many showed no cells, and numerous others contained irregular clumps of signet ring cells whose cytoplasm contained finely granular basophilic mucin. There was little necrosis and no inflammatory reaction. Several lymph nodes showed hyperplasia but no metastasis.

The tumor was a well differentiated mucinous adenocarcinoma, which in the mucosa was completely anaplastic. The lesion of the mucosa was erosion rather than deep ulceration.

The organs were otherwise normal, except that a thrombus was found in the left iliac vein, which was the only source observed for a large embolus in the right pulmonary artery.

I am indebted to Dr. H. T. Karsner, divisional chief of laboratories, for aid in the preparation of this report.

SUMMARY

A white man, aged 19, had a tubelike carcinoma of the rectum and lower sigmoid flexure. The symptoms were principally dysenteric. The tumor was a well differentiated mucinous adenocarcinoma with areas of anaplasia. Death was due to pulmonary embolism following colostomy.

3395 Scranton Road.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

RAYMOND HERTWIG, Secretary.

NOT ACCEPTABLE

GRANDMA'S OLD FASHIONED MOLASSES

The American Molasses Company of New York submitted to the Committee on Foods a "sugarcane syrup" called Grandma's Old Fashioned Molasses.

Manufacture.—The juice is expressed from sugar cane in the West Indies Islands, sieved, and heated to 54 C.; the acidity is neutralized with calcium hydroxide, the temperature is raised to just under boiling, and a thick scum forms on the surface. The clear juice is drawn off and evaporated to a syrup. The sucrose content is partially inverted during the heating by the addition of some cane juice to prevent crystallization. The syrup is cooled and barreled for shipment to the canning plant in the United States, where it is heated to 82 C. for thirty minutes and automatically canned. That syrup which is sold in bulk in barrels is not heated.

Analysis (submitted by manufacturer).—

| | per cent |
|---|----------|
| Moisture | 22.8 |
| Ash | 1.5 |
| Insoluble ash | 0.1 |
| Reducing sugars as invert | 39.1 |
| Sucrose (copper reduction method) | 30.8 |
| Fat | none |
| Protein (N X 6.25) | 1.1 |
| Calculation (by difference) | 74.6 |
| Method (Am.) | 0.006 |
| ..... | 0.5 |
| Sulphur dioxide | none |

Discussion of Name and Advertising.—The product is a "sugarcane syrup" and not a "molasses" according to the respective United States Department of Agriculture definitions and standards: "Sugarcane syrup is syrup made by the evaporation of the juice of the sugarcane or by the solution of sugarcane concrete, and contains not more than 30 per cent

of water and not more than 2.5 per cent of ash. . . . Molasses is the product left after separating the sugar from massecuite, melada, mush sugar, or concrete, and contains not more than 25 per cent of water and not more than 5 per cent of ash."

The label statement "The natural vegetable and mineral properties, vitamins and high sugar content make Grandma's Molasses a healthful food for all" vaguely implies the presence of all the vitamins and minerals required for proper nutrition, which is inconsistent with scientific knowledge on cane sugar syrup. Radio advertising includes the statement "It is wise to include a food made with health giving molasses such as Grandma's at each meal," which is a type of misleading specific "health food" claim. No food is "health giving"; a complete and adequate diet is necessary for health, but health depends on many other factors than nutrition. A recipe booklet, "Grandma's Old Fashioned Molasses Recipes," includes the claims "You can't feed that family of yours the valuable iron and minerals they need more economically . . . than by way of hot delicious muffins, cakes, . . . made healthful with Grandma's pure molasses," "Experiments prove that other foods digest more quickly and are more completely assimilated in the presence of molasses," "Eating sugar under such circumstances has been proved very reviving, but any highly purified food fails to give necessary minerals and vitamins, which explains why a natural sugar product like molasses exceeds sugar in food value and provides for better health," and "When taken into the stomach, all sugars are converted to fruit sugars before digestion. As a large part of the sugar in Grandma's Molasses is already in that form, it is a very easily assimilated food. Further, because of this fruit sugar content, its pleasing sweet flavor may be enjoyed without danger of overloading the system with sugar." This "molasses" does not provide all the minerals needed "by that family of yours," does not make "muffins, cakes . . . healthful" (they are wholesome without the molasses), does not give the "necessary minerals and vitamins," nor can the "molasses" be enjoyed in all cases "without danger of overloading the system with sugar"; other foods are not more "quickly and more completely assimilated and digested in the presence of molasses."

The name and claims are inappropriate, misinformative and misleading. The manufacturer was advised of the report of the Committee but has not expressed willingness to correct the name and advertising. This Grandma's Old Fashioned Molasses will therefore not be listed among the Committee's accepted foods.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

ROUNDY'S SUPREME STRAINED PEAS,
SPINACH, CARROTS, BEETS, GREEN
BEANS, CELERY AND TOMATOES

UNSEASONED—READY FOR USE

ROUNDY'S SUPREME STRAINED VEGETABLES
WITH CEREAL AND
BEEF BROTH

UNSEASONED—READY FOR USE

ROUNDY'S SUPREME STRAINED PRUNES
FLAVORED WITH LEMON JUICE

Packer.—The Larsen Company, Green Bay, Wis.

Distributor.—Roundy, Peckham and Dexter Company, Milwaukee.

Description.—Canned sieved vegetables, fruit and cereal prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the respective products. No added salt or sugar. The same as the accepted Larsen's Strained Vegetables, Fruits and Cereals (THE JOURNAL, July 1, 1933, p. 35; July 22, 1933, pp. 282, 283).

LARSEN'S SPINACH (STRAINED-UNSEASONED)

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved spinach prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw spinach. No added sugar or salt.

Manufacture.—Freshly harvested spinach is sorted and undesirable material removed, is washed, blanched in hot water until soft, strained in a steam atmosphere as described for tomatoes (THE JOURNAL, July 1, 1933, p. 35), admixed with a small amount of water to produce the desired consistency, heated to 82 C. in a closed vessel and automatically filled into washed cans, which are sealed and processed for sixty minutes at 116 C.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture | 95.4 |
| Total solids | 4.6 |
| Ash | 0.8 |
| Salt (NaCl) | 0.02 |
| Fat (ether extract) | 0.4 |
| Protein (N \times 6.25) | 1.7 |
| Crude fiber | 0.4 |
| Carbohydrates other than crude fiber (by difference).... | 1.3 |

Calories.—0.2 per gram; 6 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

CLAPP'S ORIGINAL PUREE OF
WAX BEANS
(ADDED SALT)

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Strained cooked wax beans; a small amount of salt is added. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—Purchased canned wax beans with a small quantity of added water are strained in an atmosphere of water vapor and subsequently treated as described for Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

The purchased canned wax beans are prepared from inspected graded wax beans, which are snipped, again inspected to remove unsuitable material, cut into small pieces, washed, blanched and filled into cans with hot brine. The cans are exhausted to remove absorbed air, sealed, processed under pressure and immediately cooled.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture | 92.5 |
| Total solids | 7.5 |
| Ash | 1.2 |
| Salt (NaCl) | 0.5 |
| Fat (ether extract) | 0.1 |
| Protein (N \times 6.25) | 1.2 |
| Crude fiber | 0.8 |
| Carbohydrates other than crude fiber (by difference).... | 4.2 |

Calories.—0.2 per gram; 6 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

QUIN-A-WINK SELF RISING FLOUR
(BLEACHED)

Manufacturer.—Federal Mill, Inc., Lockport, N. Y.

Description.—Self-rising flour containing soft winter wheat "short patent" flour, sodium acid pyrophosphate, salt and sodium bicarbonate; bleached.

Manufacture.—The ingredients in formula proportions are mixed in a batch mixer and automatically packed.

Claims of Manufacturer.—For cake, biscuit and pastry baking.

FORT HAMILTON BRAND CRYSTAL
WHITE TABLE SYRUP

(CORN SYRUP AND CANE SUGAR SYRUP;
FLAVORED WITH VANILLA)

Manufacturer.—Union Starch and Refining Company, Columbus, Ind.

Distributor.—E. H. Frechtling Company, Hamilton, Ohio.

Description.—This product is the same as Pennant Crystal White Table Syrup (THE JOURNAL, Jan. 30, 1932, p. 402).

STAUDT'S PARKER HOUSE ROLLS

Manufacturer.—Staudt's Bakery, Raleigh, N. C.

Description.—Rolls made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817): prepared from flour, water, sucrose, lard, powdered skimmed milk, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture | 28.7 |
| Ash | 0.8 |
| Fat | 5.4 |
| Protein (N \times 6.25) | 10.4 |
| Crude fiber | 0.3 |
| Carbohydrates other than crude fiber (by difference).... | 54.4 |

Calories.—3.1 per gram; 88 per ounce.

GLADIOLA SPECIAL HARD WHEAT FLOUR
(MATURED, BLEACHED)BLUEBELL EXTRA FANCY SPECIAL HARD
WHEAT FLOUR (MATURED, BLEACHED)FANT'S FAIRY SPECIAL HARD WHEAT
FLOUR (MATURED, BLEACHED)

Manufacturer.—Fant Milling Company, Sherman, Texas.

Description.—Hard wheat patent flours, bleached.

Manufacture.—Selected hard wheat is cleaned, washed, tempered, scoured and milled by essentially the same procedures as described in THE JOURNAL, June 28, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and nitrogen trichloride (one-ninth ounce per 196 pounds of flour).

LARSEN'S VEG-ALL—"A MAGIC GARDEN" FOR
SOUPS, SALADS, VEGETABLE DISHES

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Mixture of carrots, potatoes, celery, green beans, cabbage, peas, corn, lima beans, onions, sweet peppers, salt and water prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw vegetables.

Manufacture.—Freshly harvested vegetables are sorted, washed, mechanically peeled, inspected for removal of any undesirable material, cut or diced, and admixed in definite proportions. The mixture with water and salt is filled into cans, which are heated in an exhaust box in an atmosphere of steam at 82 C., sealed and processed for forty-five minutes at 116 C.

Analysis (submitted by manufacturer).—

| | per cent |
|--|----------|
| Moisture | 91.2 |
| Total solids | 8.8 |
| Ash | 1.2 |
| Salt (NaCl) | 0.9 |
| Fat (ether extract) | 0.2 |
| Protein (N \times 6.25) | 1.1 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference).... | 5.8 |

Calories.—0.3 per gram; 9 per ounce.

Claims of Manufacturer.—For soups, salads and vegetable dishes.

ROYAL LILY FLOUR (BLEACHED)
DIAMOND W PATENT FLOUR (BLEACHED)
MAINE'S IDEAL SPECIAL PASTRY
FLOUR (BLEACHED)
PURPLE CROSS ALL-ROUND
FLOUR (BLEACHED)
DAIRY MAID ALL-ROUND FLOUR
(BLEACHED)

Manufacturer.—Federal Mill, Inc., Lockport, N. Y.

Description.—Soft winter wheat "short patent" flour; bleached with nitrogen trichloride (one twenty-eighth ounce per barrel) and nitrogen oxide.

Manufacture.—See procedure described in THE JOURNAL, June 18, 1932, page 2210.

Claims of Manufacturer.—For cake, biscuit and pastry baking.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 12, 1933

THE PHYSICIAN AND NRA

Everywhere today men talk about the National Industrial Recovery Act. Questions have poured into the headquarters of the American Medical Association relative to the relationship of the medical profession to the N R A and its stipulations. Probably the most significant of these questions concerns hours of work for physicians and hours of work and salaries to be paid to their assistants and attendants. At present it is safe to say that physicians are exempt, as are other professional men, from hours of work and payment stipulations under the N R A, and that their professional employees, such as laboratory technicians, radiologists, anesthetists and similar professional groups, are not immediately concerned. However, if a physician employs more than two persons as attendants in his office, of the class of clerical employees, accountants, laborers and similar types of help, they do come under the National Recovery Act with a minimum wage and certain maximum hours of work.

The medical profession, as far as concerns its private practice, need have no immediate concern over the stipulations of this act. The legislation is not intended to interfere with the personal relationship between physician and patient, necessary to the best type of medical care. Physicians have never had definite hours of work; they have always been subject to call at any moment for the benefit of their patients. The rights of the sick man are above hours of work or regulations of this character. It is hoped that every physician will enter wholly into the spirit of the National Recovery Act as an ideal, representing the government's point of view as to the principles and motives behind which the entire nation must unite if it is to pull itself out of the slough into which it has fallen.

In his relationship to the hospital, the physician will find himself in a somewhat more complicated situation. Because of the large number of employees involved, hospitals are definitely concerned under this act. A preliminary interview of officers of the American Hos-

pital Association with the Division of Re-Employment of the N R A developed several interesting points of view. Apparently voluntary hospitals come under the provisions of the agreement with the possibility that they might be exempted when operated largely as charities incurring deficits in their operation, and also as institutions for the care of emergencies. It was the opinion of officials in Washington that administrative, professional nursing and student staffs, dietitians, technicians and other professional employees do not come under the provisions of the agreement, but that all maids, orderlies, waitresses, laundry workers and others in the lower level of wage earners do come within this classification. As hospitals give twenty-four hour service every day during the entire week, it was pointed out to General Hammond that it would work a hardship on the hospitals to attempt to apply a forty hour week for this type of personnel. Nevertheless, he expressed the opinion that seven days a week and eight hours a day constituted too many hours of employment and that even though the majority of such employees seldom put in a total of fifty-six hours, special consideration would have to be given to the question. This matter is being carried further by the American Hospital Association.

This act concerns the American Medical Association also as an employer in its headquarters office of some five hundred people. The headquarters office, by order of the Board of Trustees, entered promptly into the spirit of the act so far as concerns payment of employees in the lower wage levels and hours of work.

Again THE JOURNAL would urge physicians in all their relationships to enter fully into the spirit of the legislation, recognizing its experimental character but realizing that the times demand experimentation by the trial and error method if a solution is to be found for what has seemed in the past a most difficult problem.

REFRIGERATION AND CANCER—A FALSE PROPAGANDA

Recently an attempt has been made to connect the apparent increase in cancer, the prevalence of dental caries and certain other less definite types of ill health with the growth in the use of mechanical refrigeration. Whenever industries are involved in propaganda in the health field, the commercial motive is naturally suspected. THE JOURNAL has no brief for any interest involved in the dissemination of such claims, nor is it concerned except from the point of view of the public health in the claims made for mechanical refrigeration as opposed to the use of ice. It does have an interest in proper interpretation of statistics concerning the public health, in order that the public may not be led into fallacious beliefs or unwarranted fears.

Inquiries have come to THE JOURNAL from physicians, health officers and better business bureaus in

widely separated parts of the country relative to the propaganda concerned. Claims are made that mechanical refrigerators devitalize the food and that this alleged devitalization of the food may be responsible for the increase in cancer, the prevalence of dental caries, and a list of ills vaguely indicated as "toxic poisoning, constipation, acidosis, pyorrhea, rectal troubles" which "plague the American people."¹ It is alleged that the "respiratory" gases from foods refrigerated in hermetically sealed chambers "as dry as Death Valley" devitalize the food and render it toxic. Some highly colored pictures of a cemetery are accompanied by statements that cancer mortality has doubled since 1900, as have deaths from appendicitis. Vague references are made to "many leading authorities," but these are not named. Acknowledgment is also made by the promoter, Mr. Teigen, to "that great international authority on refrigeration, his former associate and employer." This gentleman is not named, but information in the possession of *THE JOURNAL* indicates that the reference is to a Mr. J. M. Cattanaach of Minneapolis. *THE JOURNAL* has no evidence as to Mr. Cattanaach's scientific attainments or to those of Mr. Teigen.

A letter was addressed to Mr. Teigen asking him to elucidate certain of his claims. No answer was received, so a copy was sent again by registered mail. A return receipt for the registered communication is all the reply that has thus far been received, though six months has elapsed since the date on the return receipt.

The circular to which reference is made appears to be sent unsolicited. Mr. Teigen, however, publishes a brochure which may be had for a dollar. This is an amplification of the claims made in the circular. It is characterized by the same definiteness in quoting fragments from recognized authority, coupled with vagueness and indefiniteness in the conclusions drawn from such quoted matter. In no place is the claim definitely made that cancer, appendicitis or carious teeth are attributable to the increased use of foods mechanically refrigerated, except in the title of the booklet.² The inference, however, is drawn so that the uncritical reader will inevitably make his own deductions to that effect.

Whatever may be the motive which inspires this propaganda, it may be said definitely that there is no scientific evidence to support the claims. The circulation of such unfounded literature conjures weird phobias among its readers and is prejudicial to the public health because it diverts attention from real problems and discredits genuine health education. If there is any method by which it can be reached, it should be stopped.

1. Teigen, F. A.: *Do They Deserve Contaminated Foods and Polluted Water?* Minneapolis, 1932.

2. Teigen, F. A.: *Cancer, the Potential Penalty of Electric Refrigeration*, Minneapolis, 1933.

TOBACCO ALLERGY

Nicotine may not be the dominant pathogenic agent in tobacco and many symptoms commonly attributed to this agent may in reality be chronic allergic reactions to tobacco proteins (or to bacterial proteins developed during the process of fermentation). Sulzberger¹ and his colleagues of the Montefiore Hospital, New York, have published data which do not prove that nicotine is without injurious effects but which do serve to call attention to a possibility thus far overlooked in theoretical and practical toxicological research.

Sulzberger's conclusions were drawn from a study of reactivity of the skin to various tobacco products. Tests made by the patch method on fifty-eight healthy nonsmokers, for example, showed 16 per cent with a hereditary or acquired sensitivity to tobacco extract. Similar tests with ninety-five healthy smokers showed 36 per cent with the same cutaneous sensitivity. A parallel study of seventy-three patients with cardiovascular disease exclusive of thrombo-angiitis obliterans showed 22 per cent with skin sensitivity to tobacco. This group included both smokers and nonsmokers. The same test with a group of thirteen patients suffering from thrombo-angiitis obliterans showed 77 per cent hypersensitive to tobacco, with an additional 15 per cent of these patients sensitive to other inhalant antigens. This gave a total of 92 per cent of all patients with thrombo-angiitis obliterans specifically sensitive to one or more antigenic inhalants, tobacco being by far the most common specific irritant.

In order to determine the essential factor responsible for these skin reactions, parallel tests were made with whole tobacco extract, with an aqueous extract of "denicotized" tobacco and with a 0.4 per cent nicotine sulphate solution. "In all but one of the twenty-four cases thus tested, nicotine caused no reaction. ["Denicotized"] tobacco extracts caused moderate to strong reaction in twenty-one of these cases." The general conclusion is that "many cases of thrombo-angiitis obliterans are in some way related not to a nicotine effect but to a reaction of hypersensitivity to a constituent or constituents of tobacco other than nicotine."

Evidence in support of this conclusion was obtained by a similar study of specific skin reactivity in many cases of "tobacco eczema." Here, also, cutaneous allergy was not demonstrable with the pure nicotine solution. The majority of these patients reacted to certain tobacco extracts. "We found that of the positive cases some reacted to only one of the [three] extracts [tested]; some to only two; and some to all three extracts. In other words, any given tobacco-positive patient might prove sensitive to only a given mixture of tobacco and not sensitive to any other mixture." One patient, for example, had an extremely strong reaction with a shade-grown Connecticut wrapper, whereas tests with Wisconsin filler were negative.

1. Sulzberger, M. B.: *J. Immunol.* 24: 85 (Jan.), 265 (March), 425 (May) 1932; abstr. *Bull. New York Acad. Med.* 9: 294 (May) 1933.

In another patient, "patch tests with tobacco from [a widely advertised brand of] cigarets were positive; patch tests with other brands were negative. The patient had been smoking only this brand." As soon as the patient stopped using this brand, his eczema cleared up.

The active antigenic factor in tobacco is coctostable. Little or no reduction in allergic toxicity was noted after boiling for one minute. Tobacco sensitivity, therefore, is similar to sensitivity to many other plant "proteins," many of which are coctostable.

Current Comment

FETAL CHONDRODYSSTROPHY

Although known in Egyptian times, fetal chondrodystrophy was first mentioned in medical literature by Glisson, who considered it to be fetal rickets. In the eighteenth and nineteenth centuries, much controversy developed as to the nature of this bizarre type of dwarfism. The rachitic origin of chondrodystrophy seems to have been discredited in favor of such causes as endocrine imbalance—thyroid, parathyroid, pituitary anomalies; systemic disease of the mesenchyme; reversion to a previous dwarf type; consanguinity; alcoholism, and maternal toxemia. More recently, Glisson's idea that chondrodystrophy is fetal rickets has been revived. Wilton,¹ in a recent study of the pathogenesis of the skeletal changes in four cases of fetal chondrodystrophy, applied a knowledge of modern biologic and histologic studies on cartilage and bone to this ancient disease. He points out that the development of embryonic tissues and the configuration of the skeleton are not due to external mechanical factors such as muscle activity but to internal ontogenetic causes. The rachitic factor attacks those tissues which show the greatest growth energy. The parts of the skeleton affected vary according to their state of differentiation. Wilton observed in his achondroplastic fetuses that the long bones were deformed; the ossification centers appeared late; cartilaginous bones were unusually small; the pelvis was generally contracted; the ossification zone was irregular; primary marrow spaces appeared in the cartilage; the perichondrium was thicker than normal, and the proliferation zone of cartilage was slight or entirely missing. The factor responsible for chondrodystrophy attacks the cartilage more than the bones in fetal life. Capillaries in the cartilage absorb the chondrocytes before calcification has occurred. The same factor that affects the bones and causes rickets later in life attacks the cartilage and causes fetal chondrodystrophy in fetal life. The etiologic factors of the disease are the same as in rickets: vitamin D deficiency, parathyroid hormone deficiency, and disturbances in mineral metabolism. The substances affecting the normal development of cartilage may be classified into two

groups: 1. Those substances which accelerate the biologic process of development. These substances (vitamin D, phosphorus, parathyroid hormone) Wilton calls K substances. 2. The antagonistic substances which retard this growth activity (P-factor). For normal development the ratio K/P must have a certain value. If this ratio is too small, development is delayed. Under these conditions the cartilage and cartilaginous bone are affected in fetal life (fetal rickets); at a later period the cartilaginous and membranous bones are involved (late rickets), and in adult life connective tissue, bone and teeth are affected (osteomalacia and caries of pregnancy). By means of this hypothesis Wilton expresses the various known and unknown factors in a biologic ratio which presents a concept of the biochemical equilibrium occurring in normal tissue development and demonstrates the effect of disturbed biochemical balance on the development of cartilage and bone tissue. Thus the question whether fetal chondrodystrophy is a form of rickets has been revived. It remains for further investigation to prove whether Wilton's interesting hypothesis is correct.

BERNARDINO RAMAZZINI—A TERCENTENARY

On November 5, 1633, Bernardino Ramazzini was born in Italy. His name is famous in the history of medicine as the founder of industrial and occupational medicine from both the clinical and the preventive point of view. For twenty years he occupied the chair of medicine in the school at Modena in Italy and in this period contributed works on malaria and on the results of his research in physiology. He has indeed been credited with being the first to state that mercury in a tube rises when the weather is fair and goes down when the sky is cloudy. His greatest work, however, was his treatise on "Diseases of Tradesmen,"¹ published in 1700. At that time, when he was 67 years of age, he was invited to occupy the second chair of medicine at the University of Padua. From then on he lectured regularly until November 5, 1714, the day of his eighty-first birthday, when he succumbed to an attack of apoplexy. The work entitled "De Morbis Artificum" was published and republished in the original Latin as well as in other languages in many editions. It is based on direct observation of workers in various types of industry and includes such interesting chapters as those concerning metal diggers, surgeons and others employed in frictions and inunctions in venereal cases, chemists, potters, painters, blacksmiths, "cleaners of Jakes,"² tobacconists, midwives, nurses and many others. He considered the diseases of those who stand much and of those who sit much, the diseases of wrestlers, of singers, of learned men, of those who work much with the eyes, of writers, of sailors and of innumerable others. His text reveals a rare humanitarianism, a fine quality of scientific observation, a sense of humor and the point of view of a philosopher.²

1. Ramazzini, Bernardino: *Diseases of Tradesmen*, compiled by Herman Goodman, New York, Medical Lay Press, 1933.
2. Clegg, J. G.: Bernardino Ramazzini, a biography, in the *American Encyclopedia of Ophthalmology*, 1919.

1. Wilton, Åke: *Versuche einer Deutung der Pathogenese der Skelettveränderungen bei Chondrodystrophia foetalis* (Kaufmann), *Acta path. et microbiol. Scandinav.*, supplement 15, Copenhagen, 1933.

Association News

THE CLEVELAND SESSION

Eighty-Fifth Annual Session to be Held in June

The Eighty-Fifth Annual Session of the American Medical Association will be held in Cleveland, Ohio, June 11 to 15, 1934.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

August 15. Physically Handicapped Children.
August 17. The Old and the New.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

August 19. What Is Occupational Therapy?

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Dr. Davis W. Goldstein, Fort Smith, addressed the Yell-Pope Counties Medical Society, July 13, on injection treatment of varicose veins.—The Mississippi County Medical Society was addressed in Blytheville, June 5, by Drs. Casa Collier and Robert G. Henderson, both of Memphis, Tenn., on jaundice and skin diseases, respectively.—At a meeting of the Craighead-Poinsett County Medical Society in Jonesboro, June 15, Drs. Willis C. Campbell discussed tennis elbow; Richard C. Bunting, polyneuritis, and John L. McGehee, breast tumors. The speakers were from Memphis.

CALIFORNIA

Quarantine on Mussels.—The state department of health placed a quarantine on mussels on the coast area from Monterey County to the Klamath River in Del Norte County, with the exception of San Francisco Bay, June 22, after laboratory examinations had shown mussels from these sections to be highly toxic. The sale or offering for sale of mussels gathered from these areas for the period June 22 to September 30 is prohibited. The department points out the danger of eating mussels gathered during this period of the year.

Society News.—At the regular meeting of the San Francisco County Medical Society, August 8, speakers were Drs. Raymond J. Millner, on "Methylene Blue Treatment of Cyanide Poisoning"; Edmund Butler, "Contusion of the Abdomen"; George K. Rhodes, "Treatment of Shock," and Theodore P. Schomaker, "Emergency Treatment of Fractures." The program was furnished by the emergency division of the San Francisco Department of Health.—Dr. Percy T. Magan, Los Angeles, addressed the Hollywood Academy of Medicine, July 20, on "The Making of a Doctor."

FLORIDA

Committee for Cancer Control.—Announcement has been made of the recent organization of a cancer control committee of the Florida Medical Association. Dr. Gerry R. Holden, Jacksonville, past president of the state association, was named chairman of the committee, other members of which are Drs. Joshua C. Dickinson, Tampa; Frederick K. Herpel, West Palm Beach; James M. Hoffman, Pensacola, and Gerard Raap, Miami.

Society News.—The Dade County Medical Society was addressed in Miami, July 7, by Drs. Nelson M. Black, Miami,

on "Radiant Energy, Its Characteristics, Biologic Action and Some Means of Protection Against the Harmful Effects to the Eyes"; W. Duncan Owens, Miami Beach, "Acute Appendicitis of Traumatic Origin," and Parke G. Smith, Cincinnati, "Recent Advances in Urologic Surgery."—Speakers at a meeting of the Central Florida Medical Society (Lake, Alachua and Marion counties), July 21, were Drs. William C. Blake and John C. Vinson, Tampa, on "Myocardial Ischemia" and "Treatment of Acute Epididymitis," respectively. State's Attorney A. P. Buie also addressed the meeting, on "The Doctor from the Prosecuting Attorney's Standpoint."

GEORGIA

New State Board of Health.—In accordance with a new law changing the organization of the state board of health, Gov. Eugene Talmadge has announced the new personnel. Ten members were appointed from a list submitted by the state medical association, two from a list submitted by the Georgia Pharmaceutical Association and two from a list submitted by the Georgia Dental Association. Members representing the medical association are:

| | |
|---------------------------------|-----------------------------------|
| Dr. Cleveland Thompson, Millen. | Dr. Allen R. Rozar, Macon. |
| Dr. Cyrus K. Sharp, Arlington. | Dr. Mather M. McCord, Rome. |
| Mr. R. C. Ellis, Americus. | Dr. Henry W. Clements, Adel. |
| Dr. Marvin M. Head, Zebulon. | Dr. Lisbon C. Allen, Hoschton. |
| Mr. Robert F. Maddox, Atlanta. | Dr. William A. Mulherin, Augusta. |

Members from the state at large representing the Georgia Pharmaceutical Association are Thomas C. Marshall, Atlanta, and Claude Rountree, Thomasville. Those representing the dental association are M. H. Varn, D.D.S., Atlanta, and Robert F. Sullivan, D.D.S., Savannah.

ILLINOIS

Program on Pediatrics.—Speakers at the one-day course in pediatrics held in Monmouth, July 28, for physicians of Warren County and guests from eastern Iowa and western Illinois, under the auspices of the American Academy of Pediatrics, were:

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|--|
| Dr. Heyworth N. Sanford, Chicago, Infant Feeding. |
| Dr. Bert I. Beverly, Chicago, Behavior Disturbances. |
| Dr. Charles K. Stulik, Chicago, General Treatment of Children. |
| Dr. Arthur H. Parmelee, Oak Park, Care of the New-Born. |
| Dr. Woodruff L. Crawford, Rockford, Allergy. |
| Dr. Robert H. Graham, Aurora, Preventive Medicine. |

Dr. Clifford G. Grulee, Chicago, secretary of the American Academy of Pediatrics, conducted a "question box."

Chicago

Fraudulent Sale of Bags and Instruments.—A report has been received that a man named Joseph Diamond has been seeking money fraudulently for a so-called credit and collection agency. This person has been obtaining money on orders for physicians' bags, instruments and other equipment from Chicago physicians, interns and students without delivering the goods. He is said to have been recently discharged from the Sharp and Smith Surgical Supply Company for dishonesty and is said to have an extensive criminal record. He is described as being about 5 feet 10 inches tall, slender, with black hair, dark skin, prominent brown eyes and a prominent nose.

Society News.—The Chicago Medical Society recently sponsored the following series of health lectures in the Hall of Science at the Century of Progress Exposition:

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| July 31, Dr. Philip Lewin, Infantile Paralysis. |
| August 2, Dr. John A. Wolfer, Cancer of the Breast. |
| August 3, Dr. Gilbert Fitzpatrick, Cancer. |
| August 5, Dr. George B. Lake, Mental Hygiene. |
| August 7, Dr. Fremont A. Chandler, The Crippled Child. |
| August 9, Dr. Clifford J. Barboraka, Diet in Health and Disease. |
| August 10, Dr. Francis E. Senear, Care of the Skin. |
| August 12, Dr. Max Cutler, Cancer. |

The bulletin of the society reports that 1,068 physicians have registered at its booth in the Hall of Science during June and July.

IOWA

District Meeting.—Dr. Harry H. Lamb, Davenport, was elected president of the Iowa and Illinois Central District Medical Association at its annual meeting in Davenport, July 13, succeeding Dr. Hugh A. Beam, Moline, Ill. Dr. Karl W. Wahlberg, Moline, was named vice president; Dr. John I. Marker, Davenport, secretary, and Dr. John Henry Fowler, East Moline, reelected treasurer. Speakers included Drs. Walter L. Bierring, Des Moines, President-Elect, American

Medical Association; Karl Vollmer, Davenport, president-elect, Iowa State Medical Society; George E. Decker, Davenport; Viray P. Blair, St. Louis, and James Herbert Mitchell, Morris Edward Davis and Agnes Beulah Cushman, Chicago.

MAINE

Society News.—The Washington County Medical Society was addressed at Calais, recently, among others by Drs. Albert W. Fellows on diagnosis of the eruptive fevers and Herbert E. Thompson, immunity.—At a meeting of the Aroostook County Medical Society in Houlton, June 13, the principal speakers were Drs. Edward H. Risley and John O. Piper, both of Waterville, on surgical treatment of intestinal obstruction and recent advances in the treatment of diabetes, respectively.

Ruling on Foreign Applicants for Registration.—The State of Maine Board of Registration in Medicine recently voted that no graduate of a foreign medical school will be admitted to its examinations who cannot prove that he is a graduate of a reputable foreign school, that he has at least taken out his first naturalization papers for citizenship in the United States and that he has a license to practice in the country in which his medical school is located. Dr. Adam P. Leighton, Jr., Portland, was recently reappointed a member of the board for the fourth time. He has served on the board eighteen years, for the past twelve as secretary. Other members of the board are Drs. George R. Hagerthy, Bar Harbor, chairman; Franklin A. Ferguson, Portland; William G. Chamberlain, Fort Fairfield; John G. Towne, Waterville, and Ralph D. Simons, Gardiner.

MASSACHUSETTS

Annual Meeting of State Board.—Drs. Charles P. Sylvester and Stephen Rushmore, Boston, were reelected chairman and secretary, respectively, of the Massachusetts Board of Registration in Medicine at its annual meeting, July 13. Dr. Edward A. Knowlton, Holyoke, was designated to act with these officers in the examination of chiropractors.

Dr. Osgood Honored.—The *New England Journal of Medicine* for July 13 was made up of special articles written by members of the staff of the Children's Hospital, Boston, as a tribute to Dr. Robert B. Osgood, who resigned in 1931 as chief of the orthopedic service in the institution. At the same time he resigned as the John Ball and Buckminster Brown professor of orthopedic surgery at Harvard University Medical School. The foreword in the special number was prepared by the late Sir Robert Jones, prominent British orthopedist, and most of the articles were produced from material obtained at the Children's Hospital. A large part of the work which they describe was carried on during the years Dr. Osgood was connected with the hospital.

MICHIGAN

Annual Report of Children's Fund.—The Children's Fund of Michigan, for the year May 1, 1932, to April 30, 1933, disbursed \$824,519.31 in its services to about 370,000 children, according to its fourth annual report. The program of feeding malnourished children was continued and enlarged and, at the close of the 1932 school session, sixty cafeterias were kept open for this work. A special appropriation was made for the school year 1932-1933 to provide eight emergency dental clinics for indigent children, to replace the service abandoned by the Detroit Board of Health for economic reasons. In the state-wide dental program, which is the largest single segment of the fund's health work, children in thirty-nine counties were given attention and a summer dental relief program was operated for twelve weeks. As a result of this program, three communities, Luce, Iron Mountain and Breitung township in Dickinson County, now support their own dental programs. Projects discontinued by the fund included the Menominee County Health Demonstration, infant and preschool classes and the support to child guidance clinics. This year brought to a close the fund's three year program of health education in several colleges of the state. To evolve a better plan for treating delinquent children, the fund appropriated a small sum of money to place children in boarding homes of approved environment. Since the adoption of this plan, nineteen children have been placed, two of whom failed to make good and were committed to state institutions; one was returned to his home when conditions improved, and one other passed out of the jurisdiction of the probate court handling the work. This year saw the establishment of a circulating collection of ninety-nine sets of children's books, which are lent in rotation to school districts and parent-teacher groups in communities of less than 2,000 inhabitants. Grants of the fund financed

research into causes of the decay of children's teeth; orthodontic problems, particularly dental growth and growth of bones; problems relating to childhood tuberculosis, and causative factors relating to juvenile delinquency. In addition, the fund expended \$17,240.91 on research in its own laboratory. The fund disbursed \$29,148.50 in the less prosperous sections of the northern part of the state in its program of supporting dependent children through the Michigan Children's Aid Society. At Green Pastures Camp, established two years ago by the fund for indigent Negro children, 582 children were accommodated, most of whom showed a general improvement. For the final year, a grant of \$3,000 was made to the Atlanta School of Social Work, Atlanta, for the training of Negro child welfare workers, from which Michigan draws its Negro workers. The activities of the fund are carried out in five divisions: child health, child guidance, research, dependence and miscellaneous projects.

MINNESOTA

Society News.—Members of the former Dodge County Medical Society, which had disbanded, were amalgamated into the Olmsted-Houston-Filmore Counties Medical Society, and Dodge County was added to the name of the society at a recent meeting in Rochester.—The Minnesota Dermatological Society held its annual meeting in Duluth, July 21, with clinical meetings and demonstrations at St. Mary's Hospital. Dr. Emanuel Z. Shapiro, Duluth, president of the society, was in charge of arrangements. Drs. Shapiro, Murdoch A. Nicholson, George C. Doyle, all of Duluth, and Charles W. Giesen, Superior, Wis., conducted demonstrations.—Speakers at the sixty-fifth annual meeting of the Wabasha County Medical Society, July 6, included Drs. William B. Stryker, Plainview, on "A Country Doctor's First Experience in Obstetrics"; Anson L. Clark, Rochester, "Diagnosis and Treatment of Specific Urethritis"; Rudolph C. Radabaugh, Hastings, "Use of Maggots in Osteomyelitis," and Waltman Walters, Rochester, "Advance in Surgery."

NEW YORK

Hospital News.—The cornerstone of a new \$350,000 building for the Huntington Hospital, Huntington, L. I., was laid, June 3. It was expected that the building would be placed in service, August 1.—The Buffalo General Hospital recently celebrated the seventy-fifth anniversary of its founding. The hospital now has accommodations for 462 patients.

New York City

Personal.—Mr. Reinhold Wappler, president of the American Cystoscope Makers, New York, died while traveling in Germany recently, aged 63, the *New York Times* reported, July 6. He was an honorary member of the American Urological Association.—Dr. Robert Allan Moore, instructor in pathology, Western Reserve University School of Medicine, Cleveland, has been appointed assistant professor of pathology at Cornell University Medical School.—A testimonial dinner for Dr. Daniel J. Donovan, chief surgeon of the police department, was given at the Waldorf-Astoria, July 19. Dr. Donovan recently completed forty years of service with the department.—Dr. John G. William Greeff, commissioner of the department of hospitals, since December, 1929, has announced his resignation, effective August 15.

Queens County Opens a Library.—The Medical Society of the County of Queens announces that it will open a library on a limited schedule, September 1. Periodical literature and books given by various organizations and individuals have enabled the society to make this beginning and it hopes to build up an adequate library. Classification of the material on hand was made possible by volunteer labor and the society asks members to give any time and labor possible to continue the work. It also asks those who have accumulated files of medical journals to donate those from which they are willing to part. A pathologic museum is also to be developed as an adjunct to the library, the society's bulletin announces. Here will be stored properly prepared gross pathologic specimens collected in the hospitals of the borough, with synopsis of the history of each case. The section on internal medicine and pathology is in charge of preparing the museum.

NORTH CAROLINA

Dr. Amoss Resigns at Duke University.—Dr. Harold L. Amoss, professor of medicine at Duke University School of Medicine, Durham, since the establishment of the school in 1930, has resigned to enter private practice at Greenwich, Conn., and conduct research at Rockefeller Institute for Medical Research, New York. Dr. Amoss, a native of Kentucky and

a graduate of Harvard University Medical School, was a member of the staff of Rockefeller Institute for a number of years before going to Johns Hopkins University School of Medicine in 1922 as associate professor of medicine. In 1931 he spent four months as visiting professor of medicine at Peiping Union Medical College, Peiping, China. Dr. Frederic M. Hanes, Winston-Salem, who has served as professor of neurology during the past year, has been appointed to succeed Dr. Amoss. Dr. Hanes is a graduate of Johns Hopkins University School of Medicine and has served as associate professor of pathology at Columbia for three years and as associate professor of medicine at Washington University for one year. He substituted for Dr. Amoss in the chair of medicine while the latter was in China.

OHIO

State Medical Meeting at Akron.—The eighty-seventh annual meeting of the Ohio State Medical Association will be held in Akron, September 7-8, at the Mayflower Hotel. The first day will be devoted to meetings of the house of delegates and of the sections and Friday to general sessions. At the annual banquet, Thursday night, the retiring president, Dr. Herbert M. Platter, Columbus, and his successor, Dr. Clyde L. Cummer, Cleveland, will present their official addresses and Dr. Olin West, secretary and general manager, American Medical Association, will speak on "The Need for Unity in the Medical Profession in Facing the Economic and Social Problems of the Day." Speakers at the morning general session Friday will be:

- Dr. John D. Dunham, Columbus, The Status of Peptic Ulcer in 1933.
- Dr. Chauncey W. Wyckoff, Cleveland, Throat and Ear Problems from a Pediatric Standpoint.
- Dr. Walter H. Snyder, Toledo, The Eye in Relation to Industry.
- Dr. George M. Curtis, Columbus, Newer Aspects of the Management of Hyperthyroidism.
- Dr. Harry H. Drysdale, Cleveland, Essential Factors in the Differentiation of Functional and Organic Disorders of the Central Nervous System.
- Dr. Albert H. Freiberg, Cincinnati, Sciatica in General Practice.
- Dr. Albert Graeme Mitchell, Cincinnati, Diagnosis and Prognosis of Tuberculosis in Children.

The afternoon program will be a symposium on intestinal obstruction presented by members of the faculty of Western Reserve University School of Medicine, Cleveland, as follows:

- Dr. Alan R. Moritz, Embryogenetic Basis of Congenital Obstruction.
- Dr. Harry Goldblatt, Pathology of Organic Obstructions.
- Dr. Marion A. Blankenhorn, Pathological Physiology and Symptomatology.
- Dr. Carl H. Lenhart, Surgical Management.

Dr. George Edward Follansbee, Cleveland, will address the annual organization luncheon Thursday noon on economic and social problems affecting medical practice.

PENNSYLVANIA

Society News.—Dr. Waitman F. Zinn, Baltimore, spoke on "Diagnosis and Treatment of Cancer of the Larynx" at a meeting of the York County Medical Society, June 17.—Dr. Edward A. Schumann, Philadelphia, addressed a meeting of the west section of the Fifth Councilor District Medical Society at Carlisle, July 20, on toxemias of pregnancy.

Philadelphia

Temple University News.—Announcement has been made of the appointment to the faculty of Temple University of Drs. Herman Nunberg as professor of psychoanalysis, Oliver Sturgeon English as clinical professor of psychiatry, Meyer Corff, clinical assistant in junior surgery, and Herman J. Garfield, clinical assistant in genito-urinary diseases. At the annual alumni meeting, June 14, Dr. Henry Tuttle Stull was elected president of the alumni association and members of the faculty presented graduate clinics.

TENNESSEE

State Board Election.—Dr. Benjamin L. Simmons, Nashville, was elected president of the Tennessee State Board of Medical Examiners at a meeting in Nashville, July 25. Dr. James K. P. Blackburn, Pulaski, was elected vice president, and Dr. Harley W. Qualls, Memphis, secretary. Other members are Drs. James H. Keeling, Knoxville; Thomas B. Yancey, Kingsport, and Marcus G. Spingarn, Memphis.

Personal.—Dr. Fred W. Kratz, Nashville, has been appointed health commissioner of Lincoln County, succeeding Dr. D. Dick Howser.—Dr. William H. Slaughter, who has served as head of the U. S. Marine Hospital in Memphis since October, 1930, has been transferred to Galveston, Texas, to take charge of a new hospital.—Dr. Geoffrey M. Morris, Gallatin, has resigned as health commissioner of Sumner County.

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a population of 37 million, for the week ended July 29, indicated that the highest mortality rate (21) appeared for Memphis and the rate for the group, 10. The mortality rate for Memphis for the corresponding week last year was exactly the same, and for the group of cities it was 9.5. The annual rate for eighty-five cities was 11.3 for the thirty weeks of 1933, as against a rate of 11.7 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas or that they have large Negro populations may tend to increase the death rate.

WASHINGTON

State Medical Meeting at Seattle.—The forty-fourth annual meeting of the Washington State Medical Association will be held at the Olympic Hotel, Seattle, August 28-31. Guest speakers will be:

- Dr. Eldridge S. Eliason, Philadelphia, Individuality in Treatment of Fractures.
- Dr. Ralph A. Fenton, Portland, Ore., Present Trends in Treatment of Sinus Disease.
- Dr. Ralph C. Brown, Chicago, Functional Disorders of the Large Bowel.
- Dr. John V. Barrow, Los Angeles, Amebiasis in Clinical Practice.
- Dr. Herman L. Kretschmer, Chicago, Eighteen Months' Experience in Treatment of Bladder Neck Obstruction with the Resectoscope.

A special session on economics will be held Tuesday morning, August 29, with the following speakers:

- Dr. Horace Whitacre, Tacoma, Health Insurance as Applied to the State of Washington.
- Dr. Harrison Garner Wright, Seattle, Organizing and Coordinating of Service Bureaus.
- Dr. Nils A. Johanson, Seattle, Group Hospital Insurance.
- Dr. Nathan L. Thompson, Everett, Care of the Indigent Sick by the County Medical Society.
- Dr. Warren B. Penney, Tacoma, Legislative Actions and Policies.

Clinics will be held Tuesday and Wednesday mornings at Harborview Hospital. The annual golf tournament will take place Monday at the Broadmoor Country Club. Social events will include a stag dinner at which Stephen B. L. Penrose, LL.D., president of Whitman College, Walla Walla, will give an address entitled "The First Doctor on the Pacific Coast"; a dinner dance at the Olympic, and daily luncheons. The Public Health League of Washington will hold its annual luncheon meeting Tuesday, August 29, and the local health officers of the state will have their annual convention Sunday, August 27.

GENERAL

Society News.—Among speakers at the fifth annual meeting of the Aero Medical Association of the United States in Chicago, September 2-4, will be Drs. James C. Braswell, Tulsa, Okla., on "Problems of the Civilian Examiner in Aviation"; Louis H. Bauer, Hempstead, N. Y., "Examination of the Heart"; and Ralph N. Greene, Jacksonville, Fla., "Neurologic Aspects of the Examination." Afternoons will be left free for attendance at the Century of Progress Exposition.—The annual convention of the International Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions will be held in Chicago, October 12-14.—The eighty-first annual meeting of the American Pharmaceutical Association and related organizations will be held in Madison, Wis., August 22 to September 2.

Report on Psychiatric Teaching.—The final report of a two-year study of psychiatric teaching in medical schools of the United States and Canada, conducted by Drs. Franklin G. Ebaugh, Denver, and Ralph A. Noble, New York, under the auspices of the National Committee for Mental Hygiene, has been issued. Among the sixty-eight schools studied, it was found that twenty had departments of psychiatry; fifteen combined psychiatry with neurology, and thirty-two placed it in their departments of internal medicine. One had no provision for psychiatry in its curriculum. Approximately \$600,000 was expended directly each year by the twenty-four medical schools with budgets for psychiatry, it was found, but in only four were the budgets considered adequate and these four spent practically half of the amount allotted by all the sixty-eight schools. An increase in public interest has fostered the rise of what the report calls psychologic quackery. Attention was called to the fact that journals and books on popular psychology have multiplied at a tremendous rate and that there are many different cults of psychiatrists and psychologists. On the subject of specialization the report recommends the strengthening and support of university centers of graduate instruction, establishment of a qualifying board for specialists in psychiatry, and the provision of higher degrees and diplomas in psychiatry.

It emphasizes that the aim is not to train psychiatrists as such during the medical course. "It is an accepted principle that the psychiatrist must first of all be a physician and most of his special training in psychiatry must be attained after he graduates from medical school."

Trudeau Medal Awarded to Dr. Brown.—At the annual meeting of the National Tuberculosis Association in Toronto, June 26-30, the Trudeau Medal was awarded to Dr. Lawrason Brown, who has been associated with the Trudeau Sanatorium, Saranac Lake, N. Y., since 1900. Dr. Brown was president of the association in 1920 and has been president of the American Climatological and Clinical Association (1922) and the American Sanatorium Association (1919-1923). He is the author of various works on tuberculosis. Dr. Stuart Pritchard, Battle Creek, Mich., was elected president of the association and it was decided to hold the 1934 session in Cincinnati. Special guests at the meeting were Col. Stevenson Lyle Cummins, Welch National School of Medicine, Cardiff, Wales, who spoke on investigations of tuberculosis in South Africa, and Sir Humphry Rolleston, formerly regius professor of physic at Cambridge University and president of Papworth Village, who spoke on unusual manifestations of tuberculosis and also gave an address at the annual dinner on "British Pioneers in Treatment of Tuberculosis." There were symposiums on bacteriology of acid-fast strains, silicosis as an etiologic factor in production of tuberculosis, surgery of bone and joint tuberculosis in adults, and tuberculosis—a family disease. Among the speakers were:

Dr. David W. MacKenzie, Montreal, Genito-Urinary Tuberculosis.
Drs. Florence R. Sabin and Kenneth C. Smithburn, New York, Cellular Reactions to Tubereuloproteins.
Dr. James Alexander Miller, New York, Hematogenous Pulmonary Tuberculosis.
Dr. Robert I. Harris, Toronto, Surgery of Bone and Joint Tuberculosis.
Dr. Louis Hamman, Baltimore, Malignancy of the Lungs and Pleura.

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's Memorial Hospital and Chicago Home for Incurables, \$50,000 each from the estate of Fred B. Jones.
Michael Reese Hospital, Chicago, \$100,000 from the estate of Abraham Meyer.
Truesdale Hospital, Fall River, Mass., \$10,000 by the will of Josephine M. Turner.
Anna Jaques Hospital, Newburyport, Mass., \$696,000 from the estate of Dr. John Marshall Hills.
Vassar Brothers Hospital, Poughkeepsie, N. Y., \$5,000 from the estate of Mrs. Ida Lansing Smith.
Dobbs Ferry Hospital, Dobbs Ferry, N. Y., \$6,700 from the estate of Rebecca Wendel Swope.
City of Cleveland, \$60,000 from the estate of John Colahan for an emergency hospital to be built in the downtown district.
Shriners' Hospital, Spokane, Wash., \$19,000 from the estate of Mrs. Elizabeth Winn.
St. Vincent's, Hamot and Zem Zem Hospital for Crippled Children, Erie, Pa., \$21,000 each from the estate of Joseph A. Stern.
Herman Knapp Memorial Hospital, New York, \$20,000, and Columbia University for the Edmund B. Wilson Fund for advancement of biologic research, \$10,000 under the will of Mrs. Ida Kämmerer.
Hayre de Grace Hospital, Hayre de Grace, Md., \$10,000 trust fund under the will of the late Benjamin Harman.
Frankford Hospital, Philadelphia, \$2,000 by the will of C. W. Merrell.
Among bequests totaling \$2,160,000, John Markle, retired coal operator who died July 10, left the following sums to New York hospitals and medical institutions: Neurological Institute and Conrad Berens Ophthalmological Foundation, \$50,000 each; New York Nursery and Child's Hospital and Broad Street Hospital, \$10,000 each. The residuary estate is bequeathed to the John and Mary R. Markle Foundation established in 1927 for the management of the Markle philanthropies.
New York Nursery and Child's Hospital, New York, \$50,000 under the will of the late Mrs. Mary Mildred Hammond Sullivan.
Montefiore and Mount Sinai hospitals, New York, \$7,500 each under the will of the late Adolph Arber.
Solomon and Betty Loeb Convalescent Home near White Plains, N. Y., \$500,000 under the will of the late James Loeb, who founded and endowed the institution in memory of his parents.
Frankford Hospital, Philadelphia, and Bryn Mawr Hospital, Bryn Mawr, \$10,000 each under the will of W. W. Fittler.

FOREIGN

Medical School Celebrates Centenary.—The University of Bristol Faculty of Medicine celebrated the hundredth anniversary of its founding, June 30-July 1. The school was opened, Oct. 14, 1833, with a faculty composed of lecturers from several schools of anatomy. It was later associated with the University college founded in 1876 and when the University of Bristol received its charter in 1909, the Bristol Medical School became the faculty of medicine of the university. Prof. Edward Fawcett, dean of the school, has occupied the chair of anatomy for forty years and has been dean since 1906. Dr. George Parker has written a history for the occasion entitled "Schola Medicinæ Bristol: Its History, Lectures and Alumni." At the centenary observances honorary degrees were conferred on Lord Dawson of Penn, Sir Holburt J. Waring and Sir Norman Walker, Sir Frank Colyer, Emeritus Professor Ernest W. Hey Groves and Prof. Miles H. Phillips, Sheffield.

Rural Health in China.—The annual report of the health program of the Ting Hsien experiment conducted by the Mass Education Movement in China in conjunction with the Milbank Memorial Fund, New York, states that the health service now functions through three divisions, the district health center in Ting Hsien, subdistrict health stations and the village health workers. The district hospital with a capacity of fifty beds was completed in the spring of 1932 and during the year cared for 224 patients for a total of 2,771 patient days; eleven free patients were hospitalized. Two epidemics occurred, scarlet fever in the spring and cholera in the summer. For the former no organized control was attempted because of social and economic conditions, but more than 6,000 vaccinations against cholera were administered. In the primary school, 26,435 treatments for trachoma were given, while in the normal school for girls, which has 567 students, 295 cases of trachoma were diagnosed, 3,776 treatments given and definite improvement indicated in 112 cases. Full time first aid service is now available in fifteen villages of the research community.

CORRECTION

Book Review.—In a book notice published in *THE JOURNAL*, July 22, page 307, referring to the book entitled "Cinquante techniques chirurgicales de Henry-Delagenière," it is stated that this surgeon began his professional career in Mons. This was in error, since the work was done in LeMans.

Government Services

Training for Reserve Officers

For the fifth year a course of training for Medical Department Reserve Officers will be offered at the Mayo Clinic, Rochester, Minn., under the supervision of Col. George A. Skinner, October 1-14. The staff and faculty of the clinic have placed their facilities at the service of the government, and medical officers of all services are invited to participate. Morning hours will be devoted to professional subjects selected by the student officers and afternoons to medicomilitary topics. Evening hours will be given over to a lyceum course of general interest. One hundred hours' credit will be given to those who take the entire course, but those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional. Application for the course should be made to The Surgeon, Seventh Corps Area, Baird Building, Omaha, Neb.

Health in Conservation Corps

During the month ended June 24, approximately 9,000 members of the Civilian Conservation Corps were reported sick and 2,000 injured. About 1,900 illnesses were common respiratory diseases and influenza; 460 cases were measles; 247, diarrhea; 196, venereal diseases; 130, malaria, and 121, scabies. Nine cases of tuberculosis were found; three each of cerebrospinal meningitis and diphtheria; two of typhoid and one each of scarlet fever and tick fever. Twenty-seven deaths occurred.

U. S. Public Health Service

Passed Asst. Surg. George W. Bolin, relieved at marine hospital, Galveston, Texas, and assigned at the quarantine station, Marcus Hook, Pa.
Passed Asst. Surg. Hiram J. Bush, relieved at Savannah, Ga., and assigned at Ellis Island.
Surg. Marion S. Lombard, relieved at Key West, Fla., and assigned at Memphis, Tenn., in charge of the marine hospital.
Asst. Surg. Charles T. Meacham, Jr., relieved at Boston, and assigned at the marine hospital, New York.
Sr. Surg. Hermon E. Hasseltine, relieved at Washington, D. C., and assigned in charge of the Public Health Service Laboratory, San Francisco, and office of plague suppressive measures, in addition to duties as medical officer in charge of studies being conducted at the laboratory for investigation and control of psittacosis at Pasadena.
Asst. Surg. Marion K. King, relieved at New Orleans and assigned at the marine hospital, Savannah.
Surg. Clifford R. Eskey, assigned as chief quarantine officer at Honolulu, T. H.
Intern Merrill J. Reeh, relieved at Chicago, and assigned at McNeil Island, Steilacoom, Wash.
Surg. Robert W. Hart, relieved at the marine hospital, San Francisco, and assigned as medical officer in charge of marine hospital, Key West, Fla.
Carl B. DeForest, commissioned as assistant surgeon in reserve corps of the service.
Surg. Gleason C. Lake, relieved at San Francisco and assigned at Seattle.
Dr. Henry H. Duke, commissioned as assistant surgeon (reserve).

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 23, 1933.

Automatic Firedamp Alarms for Coal Mines

During the last fifty years, 58,000 men have been killed in British coal mines. Every year 5,000 are seriously crippled and 170,000 temporarily disabled. The cost in workmen's compensation is over \$15,000,000 a year. Portable electric lamps have two advantages over the Davy safety lamp: they do not initiate explosions, whereas the Davy lamp may do so, and they give better illumination. But electric lamps give no warning of the pressure of gas. A miner using an electric lamp may be working in gas of explosive density without knowing it. The law requires two inspections of a mine during each working shift by a trained official, who can withdraw the men if he detects more than 2.5 per cent of gas. The Miners' Federation has objected that four hours may elapse between the two inspections and that practically every explosion happens in a place which shortly before had been pronounced safe. An automatic firedamp alarm has been invented and tested by the federation and found effective. In 1815 the Davy lamp was invented, but no further advance was made in gas detection until a few years ago. The Davy lamp enabled the miner to ascertain the presence of gas in his working place and its use in gaseous mines was made compulsory. But the federation says that the frequency of mining disasters—about fourteen a year—notwithstanding the use of the Davy lamp, shows that it is far from adequate. The federation describes gas as the greatest menace to safety in the mines. It is a direct danger as a cause of explosions and an indirect danger, because it limits the amount of lighting possible. Better lighting would reduce haulage accidents and also accidents due to falls of roofs. It would minimize the occurrence of miners' nystagmus, which is the cause of the incapacity of 10,000 men and costs the industry \$2,500,000 a year. The federation says that a mine employing 1,000 men can be equipped with automatic alarms at a cost of \$15 a week, against which could be set savings in insurance and accident compensation. The automatic alarm shows a red light when gas is present. It tests for gas automatically and continuously.

New Facilities for "Beam Therapy" with Radium

In previous letters it was reported that the Radium Commission withdrew the 4 Gm. radium bomb, used for massive radiation at the Westminster Hospital, as the results were declared unsatisfactory. Doubts were raised as to the wisdom of this decision, and a conference was called by the presidents of the Royal Colleges of Physicians and Surgeons. An expert committee was appointed to consider the subject of mass radiation, and it expressed the opinion that a unit of not less than 5 Gm. should be established. The Belgian company, the Union Minière du Haut-Katanga, which produces most of the radium used in the world today, has offered to lend 5 Gm. of radium for "beam therapy" (the new name to be used, as the misleading term "bomb" has been dropped). The new research will be controlled by a representative body of seven members, which includes Sir F. Gowland Hopkins (president of the Royal Society), who will act as chairman, the presidents of the Royal Colleges of Physicians and Surgeons, Mr. Wilfred Trotter, F.R.S., Sir George Blacker, Lord Rutherford, and Prof. Arthur Hall. An executive research committee has been set up with Prof. J. C. M'Lellan, F.R.S. (late professor of physics at Toronto) as chairman. The research will be carried on at the London Radium Institute. The loan from the Union Minière is to be free of cost excepting insurance, and a further 5 Gm.

has been promised at a later date if required for mass radiation. The period provisionally fixed for the loan is two years. The work before the radium beam therapy research will be to endeavor to discover how far the present limited field of operation for a massive radium unit in the treatment of cancer may be extended by coordinated clinical, experimental and physical research.

The Serum Treatment of Acute Poliomyelitis

The Medical Research Council announces that it will supply serum obtained from patients convalescent from acute poliomyelitis with a view to its trial in the preparalytic stage of the disease. Encouraging reports have been received on the value of this treatment from Australia and Canada, but adequate data are still needed to confirm its value, particularly in view of doubts cast by recent experience in America on the reliability of the basic data. At present the supply of serum has been deposited at the Western Fever Hospital, London, where suspected cases will be admitted for observation and treatment in the preparalytic stage and supplies of serum can be obtained by physicians. When the supply of serum becomes larger, it is hoped also to be able to send supplies to university centers in the provinces. The serum will be supplied gratuitously on condition that record forms be completed and sent to the Medical Research Council. It is considered that it should be used only by a physician or a pathologist experienced in the technic of lumbar puncture and intrathecal injection. The serum is issued in outfits of four 25 cc. ampules, sufficient for the treatment of one case. Owing to the limited stock available at present, physicians are requested to confine the treatment to the preparalytic stage or exceptionally to a pyrexial phase when the symptoms indicate rapidly progressive invasion of the cord, as shown by extension of paralysis. The serum is on no account to be used in the postfebrile stage, when the infection has become quiescent and paralysis is established.

Milk-Borne Diseases

At the International Pediatric Conference, held in London, an important discussion took place on milk-borne diseases. Dr. J. M. Hamill, medical inspector of the Ministry of Health, said that about 7 per cent of the milk samples taken at various towns in the country contained tubercle bacilli. Two thousand deaths, mostly in children, occurred annually from bovine tuberculosis, and there were a large number of persons with nontuberculous bovine tuberculosis who did not die from the disease but were sufferers throughout life. There was little likelihood that within a reasonable time it would be possible to obtain a tubercle-free milk supply. It would therefore be necessary to rely on pasteurization. But in addition to that all efforts should be made to reduce disease in cattle.

Dr. Wilburt C. Davison of Durham, N. C., suggested that there was just as much danger of infection of milk in the home from mother's fingers or flies' legs as in the dairy. The only safe sterile milk, which remained sterile, was evaporated milk unsweetened, which, with the addition of an equal quantity of water and a small amount of lactic acid, provided a perfectly pure milk, even cheaper than raw milk.

Prof. G. B. Allaria of Turin said that there was always a debatable question between those who asserted the necessity of giving children raw milk and those who upheld the necessity for bacterial purification, even at the expense of its vital properties. In the present state of the dairy industry in most countries the bacterial danger was the greater. This view was also supported by Prof. Pierre Lereboullet of Paris, who, while urging a vigorous initiative to improve the conditions of milk production and sale in all countries, so that a safe milk for all children might be available, contended that in the absence of such an elaborate and controlled organization the boiling of milk before consumption remained the sole method of protection.

Tribute to Dr. G. F. Still

Dr. G. F. Still, a pioneer in pediatrics, is about to retire from hospital engagements, and his friends have decided to recognize the occasion. In 1899 he was appointed to King's College Hospital, when no physician for diseases of children had ever been appointed to any of the teaching hospitals of London. A children's ward was in existence, but it was under the care of a gynecologist or the most junior member of the staff, who was required to hold it until he was promoted to the care of adults. But children's hospitals, including the leading one of Great Ormond Street, were already in existence. The example has been followed by many hospitals with medical schools. An influentially signed letter inviting subscriptions for the tribute to Dr. Still has been published in the medical and lay press. Among the signatures are those of Lord Beatty (chairman of King's College Hospital), Charles A. Fife (president of the American Pediatric Association), A. Dingwall Fordyce (president of the British Pediatric Association) and F. F. Tisdall (president of the Canadian Society of the Study of Diseases of Children). It is proposed that a "Dr. Still cot" will be endowed at King's College Hospital and an eminent artist, Mr. Gerald Kelly, has promised to give a portrait of Dr. Still if not less than \$2,500 is subscribed for the cot.

PARIS

(From Our Regular Correspondent)

June 28, 1933.

International Convention of Neurologists

The chief topic on the program of the thirteenth International Convention of Neurologists, recently held in Paris, was "Serous Meningitis." Professor Claude discussed the significance of this term, which he believes is inaccurate, as it includes three different types of disease: (1) internal hydrocephalus, which is a form of ventriculitis; (2) external hydrocephalus, which may be divided into several groups, one involving the dura mater, another the cerebral arachnoid, and (3) another the spinal arachnoid. The causes are various, being more commonly of infectious origin. The symptoms may be distinguished from the manifestations of cerebral tumors. The most significant symptom is headache, which may be accompanied by convulsions or coma. There is no hypertension of the cerebrospinal fluid.

Gaston Boschi of Italy read a paper on internal hydrocephalus, or ventricular serous meningitis. Hydrocephalus may be produced by reactions following irritative states within the neuraxon. They are facilitated by lymphatic plethora and by the retardation of metabolism. Finally, there is idiopathic hydrocephalus, which is to be considered the result of an infectious or toxic condition. The biologic mechanism whereby radiotherapy leads to improvement in the treatment of hydrocephalus is unknown.

Mr. Petit Dutailis discussed the surgical treatment of serous meningitis. When serous meningitis follows infectious diseases, repeated lumbar punctures may suffice. If there is a local focus of infection—often of otic origin, the focus should be carefully examined. Treatment of the hypertensive syndrome takes the form of trepanation and incision of the dura mater, according to the technic of Bourgeois. The clinical diagnosis of the subacute or chronic form is difficult to establish. Often only an operation will establish the diagnosis. Such palliative methods as punctures and decompression by trepanation act only on the intracranial hypertension. More and more, modern surgery tends to intervene directly in ependymitis of the lateral ventricles through opening up of the foramen of Monro, perforation of the septum lucidum, and in ependymitis of the fourth ventricle by opening up Magendie's foramen. Finally, the author considered the more hazardous treatment of arachnoiditis by incision, evacuation and resection of the pockets.

Clovis Vincent, Marcel David and Pierre Puech explained the indications, the technic and the accidents of ventriculography. Following Cushing, the authors use the method more and more (in 50 per cent of the cases coming to operation). They operate in the hours immediately following ventriculography, avoiding thus accidents due to the exploration. Clovis Vincent, F. Rappoport and J. H. Berdet, discussed ventriculography performed by the lumbar route, which enables the operator to make the cerebral ventricles and the subarachnoid spaces visible simultaneously. For a study of the ventricles, this method would not be equal to direct encephalography. It is sometimes used as a therapeutic intervention in disorders following cranial injuries, in which it has sometimes given good results. The technic is delicate. The problem is to withdraw the fluid only so fast as it can be replaced by sterile air, in order not to cause the pressure to vary, and then to apply radiography immediately. The authors have not had any serious accidents in sixty-five cases.

Negligence in Application of Law on Notification of Contagious Diseases

The Academy of Medicine, in a booklet published by the academy itself, complains of the negligence in the enforcement of the law pertaining to the compulsory notification of contagious diseases. Many physicians neglect to make such notifications, usually to save their patients inconvenience. Notification brings a crew of official disinfectors, who overrun the apartment or inundate it with antiseptics. The physician prefers, particularly in homes of the rich, to have the disinfection carried out by private companies that are more careful, working under his own supervision. But, since statistics are based on these notifications, the result is that they are, to a certain extent, distorted. The academy has become aroused by this state of affairs. A commission, of which Prof. Léon Bernard was chairman, reported that there has been of late some slight improvement, but only in the departments of France in which there is a health inspector. Many of the departments, however, have no health inspector. In a resolution addressed to the minister of public health, the academy calls the attention of the minister to the fact that the notification of all diseases regarded as contagious is compulsory according to law and that the responsibility for the fulfilment of such duty rests on the head of the family, the heads of institutions and the physicians in charge. The resolution adds that the law would be much better enforced if the minister would see that, in all the departments, a health inspector is installed, since the physicians are more willing to apply to a health inspector than to the offices of the prefecture.

Tincture of Iodine in Disinfection of the Skin

The method introduced in 1908 by Grossich of Trieste for the disinfection of the skin with tincture of iodine before surgical operations was rapidly adopted throughout the world. Dr. Robert Sorel of Havre, however, has for years opposed this procedure. According to Sorel, tincture of iodine has only a superficial value and does not assure a sterile operative field for more than twenty minutes, which is not sufficient. There develops a varnish-like covering composed of cauterized epidermis, in which fissures soon appear, which allow the subjacent micro-organisms to emerge, with the secretions of the cutaneous glands. The use of any other varnish would render exactly the same service, as Sorel proved experimentally. Samples taken by means of a platinum wire passed over the skin twenty minutes after painting with iodine nearly always give positive cultures. The procedure gives a false sense of security, by dispensing with thorough disinfection of the skin, as was formerly done. Sorel, at the Hôpital du Havre and in the clinic, operates without painting with iodine. The patient first takes a long bath; then, on the operating table, the operative

field is covered simply with sterile compresses. The surgeon passes over the line of incision a compress dipped in sterile soap and wipes off the surplus with a dry sterile compress. He then operates, and when the skin is closed he removes the traces of blood with a compress dipped in sterile soap and then applies a sterile compress to the wound. No antiseptic fluid is employed at any time. Sorel has used this procedure with good results for more than ten years. Tincture of iodine, he says, irritates the skin.

The Visibility of Ultraviolet Rays

Ultraviolet rays have been regarded as invisible to the human eye. That is not absolutely true; at any rate, the visibility varies with the age of the person. Mr. Jean Saidman has made a filter that absorbs completely the rays of the visible spectrum and also the beginning portion of the ultraviolet rays, while preserving good transparency up to 3,100 angstroms. With this filter he studied the visibility of the ultraviolet rays. He found that the visibility of the 3,130 region, though constant in youth, disappears between the ages 34 and 43, or thereabouts. Of the seventy-two persons who saw the ultraviolet rays with both eyes, fifty-two stated that the impression was alike for the two eyes and twenty-two saw much better with one eye than the other. The human crystalline lens is therefore not so opaque as was supposed. The disappearance of the visibility of ultraviolet rays up to 3,130 angstroms would indicate an aging of the crystalline lens, and the procedure described might, the author states, be used to detect the beginning of ocular sclerosis.

BERLIN

(From Our Regular Correspondent)

July 3, 1933.

Reorganization of Higher Schools of Learning

According to an announcement of the Prussian ministry of public instruction, plans for reorganizing the higher institutions of learning will be carried out in the near future. The reorganization is to begin with a sharp adjustment of the incomes of the head professors and the poorly compensated extraordinarii and privatdozenten. It will then be extended to the makeup of the faculties and to reshaping the courses of instruction. In an official report of the ministry for science, art and public education, the announcement is made that it would be inconsistent with the principles of the national government and the corporate character of the higher institutions of learning if private organizations such as the Verband der deutschen Hochschulen or the Rektorenkonferenz should be allowed to participate in the deliberations. The ministry reserves, however, the right in some cases to request certain of the rectors and eminent specialists to take part in the deliberations. The Hochschulverband also will continue its social tasks (supplying of aid for the families of deceased members) with the full approval of the ministry.

The minister of public instruction has informed the faculties that, in the coming months, he will depart from the customary procedure in the appointment of new professors. In a number of cases the faculties will not be requested to send in a list of the men they would like to see elected to fill vacancies, but the faculties will be given an opportunity to approve or disapprove proposals made. This simple method of deciding on new appointments is said to be necessary because otherwise the prompt filling of vacancies is endangered.

As the second measure, which is based on a law that went into effect July 1, it has been decreed that the authorities can intervene widely in the property rights of officials for the purpose of equalizing salaries, and that a reexamination by the courts is absolutely excluded. This equalization (which amounts in reality to a reduction) of salaries is to be carried out strictly, without taking account of special assurances, agreements, adjust-

ments and judicial decisions or settlements that may be of record. With regard to instructors in institutions of higher learning, it is provided that assurances given in connection with a calling to a post (which have always been customary, as regards the guaranteed income from students' lecture fees) may be altered or abolished, with the exception of those pertaining to the establishment of seniority.

For the first time since the war, there has been a decline in the last few years in attendance at German higher institutions of learning. The matriculations (after deducting the future public school teachers, who, of late, have participated in university courses) dropped from 21,525 in the summer of 1928 to 18,767 in the summer of 1932. In the summer of 1928 the number of new male students in the universities was 17,969; last summer the number dropped to 15,259. The number of new female students rose from 3,559 in the summer of 1928 to 4,664 in the summer of 1931, but in the summer of 1932 it dropped to 3,508. The decline from the summer of 1931 to the summer of 1932 amounted to 13.8 per cent.

Marriage Consultation Centers Closed

The Berlin municipal prenuptial consultation centers have been closed for the time being. Their reopening on a new basis will not be considered until the principles that are to govern the promotion of population in the new state have been established with precision.

Berlin established in 1926 its first prenuptial consultation center, following a resolution passed by the Prussian parliament demanding that persons about to be married be required to exchange health certificates. The resolution was not incorporated in a federal law, so the proponent had to be content with a voluntary health certificate issued gratis to engaged couples following a thorough physical examination. Leaflets that were given out by the bureau in charge of marriage licenses called attention to this new arrangement. The desire for an official certificate of health was regarded, in spite of attempts to explain the need of such a document, nearly always as offensive. If the physician established that either applicant was unfit for marriage, the advice of the physician was not usually followed. Almost without exception, feelings of self interest proved stronger.

The happy idea of allowing the physician in charge of a consultation center a large measure of liberty in rendering decisions led to a wide difference in the centers, of which there are hundreds in Germany. In many of these centers, consultations on marriage difficulties became the center of interest. Information on birth control gave some centers a socialistic trend.

The announcement of new regulations in this field is awaited with interest, for it is the understanding that they go far beyond the cases commonly handled in the centers and will influence the future of the German family. In any event, one can count on a federal regulation of births, having as its objective improvement in the health of the people, with emphasis on the prevention of children being born to incurable patients, weak-minded persons, and the like. The numerous opponents of present laws on the interruption of pregnancy would go even further. They have demanded for years a reform. They hope that this question, which for women is a matter of life and death, may be solved. They do not demand abolition of the paragraph of the penal code on abortion but they do demand its revision.

There is a different trend in southern Germany. The Badische Gesellschaft für Eugenik, a chapter of the Deutsche Gesellschaft für Rassenhygiene, has established in Karlsruhe a medical prenuptial consultation center for persons of moderate means, the purpose of which is to seek out the families of physical and mental superiority and to promote the propagation of children within their ranks, while endeavoring to prevent such propagation in families of inferior type.

Aims of the National-Socialist Medical League

According to an announcement at a joint session of the National-sozialistischer Deutscher Aerztebund and the Bund Deutscher Aerzte, Gau München, the agenda for the immediate future are as follows: admission of ex-service men in accordance with special regulations; measures to prevent two sources of income to one person, in order that as many persons as possible may have an opportunity to earn a living; simplification of the fee schedule; revision of the laws pertaining to physicians of the health insurance panel; regulation requiring every physician to begin his medical practice in the rural districts, a measure that is designed to promote a deepening and a broadening of medical experience, as well as the supplying of neglected regions with adequate medical service; organization of an order of federal physicians to serve as a guiding body; reforms in medical studies in the direction of a stronger emphasis on practical training and development of character.

Unfair Medical Advertising

The Prussian minister of the interior has issued an order concerning the advertising of articles, devices, remedies or procedures for the prevention or treatment of disease in man or animals. Forms of advertising in which the actions and effects ascribed to these articles are beyond their true value and deceptive advertising are prohibited. It is also forbidden to advertise devices and remedies that may be injurious to health or can be dispensed only on prescriptions issued by physicians or veterinarians. This executive order creates a uniform law in this field—at least for Prussia. It will not only check illegal traffic in certain medicines, which had become unbearable and was seriously interfering with scientific medicine, but will also suppress the fraudulent traffic in harmless remedies at exorbitant prices following fantastic therapeutic claims, causing patients to delay in consulting a physician. It will work against the "patent medicine" swindle, which advertised in the daily press and with pamphlets.

MADRID

(From a Special Correspondent)

June 10, 1933.

Seventh International Congress of Military Medicine

At the seventh International Congress of Military Medicine and Pharmacy in Madrid, May 29-June 5, twenty-six nations were represented; 1,400 conventionists, including the president of the republic, the minister of war and the minister of marine, attended the opening session, in the Teatro de la Comedia. Dr. Coca welcomed the conventionists in the name of the municipal council of Madrid.

After addresses by Lieut. Col. A. Van Baumberghen, M.D., Gen. Gonzalez Granda, president of the congress, and Lieutenant Colonel Voncken, M.D., general secretary of the permanent committee of the congress, the president of the republic, in a vigorous address, exalted the rôle of military medicine, and pointed out that international ties established by the congresses may constitute a guaranty of peace among the nations.

In the evening, the president of the republic gave a reception in the National Palace, displaying a cordiality that delighted every one. During the congress, excursions to the Escorial and to Toledo were organized. A magnificent reception was given by the government in the salons of the Hotel Ritz. Thanks are due the ladies' committee for its efforts to make the visit pleasant for the foreign ladies who attended the sessions. Several topics were discussed.

PRINCIPLES UNDERLYING SANITARY ORGANIZATION DURING WAR; APPLICATIONS OF NEW GENEVA CONVENTION

The papers on the first topic were presented by Col. Potous Martinez, M.D.; Lieut. Col. Gonzales Deleito, M.D.; Fernandez

de Rojas y Cedrun, assistant pharmaceutical inspector of the Spanish army, and Lieutenant Colonel Nordlander of the Swedish army.

The conclusions adopted were:

1. In view of the broad nature of the subject, the conclusions must take on a general character and cover the following points: (a) prevention, (b) evacuation, (c) treatment and (d) recuperation.

2. Consequently, the complex activities for the promotion of the health of the army should develop under the general supervision of the commanding officer, but with complete independence as regards everything pertaining to the use of sanitary personnel and equipment.

3. The quality of the service will be improved if the personnel of the sanitary corps has been carefully selected and has received a special military and technical training.

4. Such preparation is necessary also for the supplementary and the reserve personnel, an appeal being made to the mobilized civil practitioners in the ranks of the army.

5. In view of the constant evolution of medical science, a body of specialists of proved ability should be organized within the army medical corps.

6. The Geneva Convention, the magna charta of the army medical corps, establishes only the general principles that must be applied by all in a uniform manner. It therefore appears desirable to codify all the measures to be adopted on the subject.

PREVENTIVE VACCINATIONS IN MILITARY FORCES

The papers on the second topic were presented by Captain Sheldon, surgeon; Captain Whittingham, M.D., and Lieutenant Colonel Dawson, of the British army; Major Masaji Kitano of the Japanese marine, and Major Saéz F. Casariego, pharmacist, and Lieut. Col. Fernandez Martos, M.D., of the Spanish army.

The conclusions adopted were as follows:

1. Preventive vaccinations designed to protect the troops against infectious diseases should be given, in times of peace as well as of war, in order to combat epidemics and outbreaks. The application of this measure will vary according to the existing health conditions in the armies concerned.

2. Vaccination must not relieve one, by any means, of using all other measures to combat contagion.

3. The method of combined vaccinations is to be recommended.

4. It is desirable that, before he is assigned to a unit, the soldier shall be immunized against those infectious diseases which are amenable to vaccination. It is recommended that, in each country, an understanding should be reached between the civil and military authorities as to the best methods of vaccinating.

5. It is desirable that the methods employed in the various armies for the preparation of vaccines and other prophylactic measures be published.

TREATMENT OF URGENT SURGICAL CASES AT THE FRONT

The papers on the third topic were presented by Lieut. Col. Gomez Ulla, M.D.; Commandant Sanchez Vega, M.D.; Commandant Herre Menguijon, M.D.; Capt. Madruga Jimenez, M.D.; Capt. Martin Santos, M.D.; Campoy Irigoyen, pharmacist, of the Spanish army; Commandant Martinez Falero, M.D., and Commandant Abengoichea Laita, M.D., of the Spanish marine, and Lieut. Col. Leman, M.D., of the Belgian army.

The conclusions adopted were as follows:

1. The success of the treatment depends on the rapidity and on the manner of the evacuation to the nearest surgical center.

2. The conception of a specialized surgical unit must necessarily, in warfare, be based on the experiences of the World War.

3. Considering the nature of open warfare, the types of surgical field hospitals in the last war appear too complicated.

As a more mobile unit, the motorized, interchangeable surgical group is suggested.

4. This unit would constitute an army corps service intermediate between the services of the extreme front line, the divisions, and the more fixed services of the army.

5. For the performance of its duties, it will take up its position in the immediate vicinity of the field hospital or of requisitioned buildings, as the case may be, and must be supplied with suitable means of transportation.

6. The proposed surgical unit will be modified as much as possible in accordance with the circumstances of the war and, especially, the nature of the terrain. It must be light and mobile.

PRESERVED FOODS IN THE RATION IN PEACE AND WAR

The papers on the fourth topic were presented by Emilio Salazar Hildago, pharmaceutical assistant inspector of the second class; Juan Casas Fernandez, pharmacist of the first class; Pedro Calvo Munoz Torrero, pharmacist of the first class; Eduardo Robles Perez, commandant of the commissariat, and Lieut. Col. Victor Herrero y Diez de Ulzurum, M.D., of the Spanish army; Emilio Fernandez Espina, commanding pharmacist, of the Spanish marine, and Colonel Thomann, pharmacist, of the Swiss army.

The conclusions adopted were as follows:

Preparation and Preservation: 1. In view of the importance of preserved foods in the diet of the soldier, the first condition that such foods must fulfil is a good method of preservation.

2. To assure good preservation, it is necessary that (a) the products used (meat, flour, ground products, milk, and the like) should be of the best quality; (b) during the preparation of the preserved foods the greatest cleanliness must be observed, and the sterilization must be thorough and complete. If sterilization is not possible, desiccation (bread, soup and the like) may be sufficient.

3. With the exception of sodium chloride, and saltpeter in minimal quantities, all preservatives must be prohibited.

4. The date of manufacture must be stamped on the metal receptacle or printed on the package.

5. Since, at present, the analytic procedures vary in different countries, it is desirable to bring about uniformity in the methods of analysis in use in armies and to have these methods published either in the pharmaceutical formularies or in other documents placed in the hands of the military pharmacists.

6. The control of preserved food products in the rations of armies should be entrusted in principle (a) to a bacteriologist and to a medical hygienist, for the appraisal of the nutritive value, and (b) to specially qualified chemist-pharmacists, for the chemical aspects of the problem.

STUDY ON ORGANIZATION OF THE DENTAL SERVICES

The papers on the fifth topic were presented by Dr. Angel Vazquez of the Spanish army and the Mexican army medical corps.

The conclusions adopted were as follows:

1. The creation of an odontostomatologic service for the whole army is desirable.

2. Its activities would take the form of (a) prophylaxis, hygiene and buccodental treatment, and (b) possible cooperation with the identification services.

3. The technical personnel should be made up of professional dentists and stomatologists with legal diplomas.

4. Medicomilitary specialization on the part of odontologists should be based on a suitable preparation.

ORGANIZATION OF THE ADMINISTRATIVE SERVICES

The papers on the sixth topic were presented by Frederico Abeille y Rodriguez Fito, lieutenant colonel of the commissariat, and José Abadal y Sibila, pharmaceutical subinspector of the second class, of the Spanish army.

The conclusion adopted was that, since a good administrative management constitutes an indispensable guaranty of the correct functioning of the sanitary services, it is desirable to entrust such duties to a body of officers specially trained for the work.

OTHER TOPICS

During the congress, a number of special meetings of the chief officers of the sanitary services, in which the delegates of the association of international law and the Spanish national group of the international association of social progress participated, were held. The questions discussed included the development of international collaboration in the domain of military medicine (1) from the social point of view and (2) within the compass of international law.

The next congress will be held at Bucharest in September, 1935, under the chairmanship of Medical Inspector Butoiano, head of the Rumanian army medical corps. The following topics will be discussed: (1) principles of the organization and functioning of the sanitary services in mountain warfare, discussion to be opened by Rumania and Italy; (2) determination of the aptitude for various specialties in the land, sea and air forces, discussion opened by Rumania and France; (3) sequels of abdominal wounds, presented by Rumania and the United States; (4) research designed to make more uniform the methods of analysis of foods and beverages, discussion to be opened by Rumania and Czechoslovakia; (5) promotion of buccodental care, presented by Rumania and Lithuania, and (6) comparative study on the characteristics of the sanitary administrative services, discussion to be opened by Rumania and Chile.

The International Bureau of Bibliography of Military Medicine

The third session of the International Bureau of Bibliography of Military Medicine, in the auditorium of the university in Granada, June 5-8, 1933, was attended by more than 200 persons representing twenty-seven nations. Following is a list of the papers presented, all of which gave rise to exhaustive discussion: Functioning of the Army Medical Corps in the field, by Colonel Schickelé, M.D., of France; The Evolution of War Surgery, by Inspector General Butoiano, M.D., Rumania; Medical Inspection of the Various Classes Before and After Military Service, by Commandant Don Ricardo Murillo Ubeda, M.D., Spain; Professional Selection in the Army; Psychotechnical Recruiting, by Capt. Enrique Blasco Salas, M.D., Spain; Chemistry in the Service of Hygiene in the French Marine, by Saint Sernin, pharmaceutical chemist of the first class, France; Military Medicine and Its Relations to Modern Warfare, Especially from the Point of View of Aviation, by Lieut. Commander Julius Neuberger, United States; Cysticercosis as the Cause of Epilepsy in Soldiers, by Colonel Huszcsa, M.D., Poland; Military Medicine in the Service of the Mobilized Nations, by Captain Reynders, M.D., Belgium; Actinotherapy, Ultraviolet Rays and War Surgery, by Juan Ortega Lechuga, M.D., Spain; Role of the Military Pharmacist in the Army and Organization of This Service, by Rafael Roldan y Guerrero, pharmacist, Spain; Lesions of the Meniscus, by Captain Glorieux, M.D., Belgium; and National and International Organization of Civil Protection Against Chemical Warfare, by Captain Cambresier, M.D., Belgium.

ALLOTMENT OF A SPECIAL AREA FOR THE SANITARY SERVICES

The congress, viewing the great dangers from bombardment to which the sanitary field units and the fixed hospital establishments are exposed, adopted the following double resolution:

1. Adequate space should be reserved for the exclusive needs of the sanitary services and should be identified by the insignia of the Red Cross.

2. Regulations should be established as soon as possible covering the details of the application of the provision of

July 29, 1929, of the Geneva Convention, looking toward the amelioration of the lot of the sick and wounded of the armies in the field.

APPLICATION OF THE GENEVA CONVENTION

The congress adopted a resolution demanding that the stipulations of articles 26 and 29 of the Geneva Convention of July 27, 1929, be carried out as soon as possible by the governments that were signatories of the convention, in the following manner: 1. Military regulations shall mention the principal provisions of the Geneva Convention. 2. The codes of military justice shall establish the penalties applicable in case of violation of this convention.

The permanent committee of the congress empowered the Spanish Association of International law to draft a preliminary document to be submitted at the next meeting of the bureau, in 1934.

VIENNA

(From Our Regular Correspondent)

July 10, 1933.

The Roentgenologic Examination of Nerves, Lymphatics and Blood Vessels.

A demonstration of a new method of roentgenologic diagnosis with the aid of contrast mediums was given here at a recent session of the Gesellschaft der Aerzte, by Dr. M. Saito of Japan. To render peripheral nerves visible, Dr. Saito injected at first iodized poppy-seed oil and later a 25 per cent solution of thorium dioxide applied percutaneously, perineurally or intraneurally. He used, at the most, 1 cc. intraneurally or 20 cc. perineurally. If the nerve to be reached lies in the deeper tissues, it must first be laid bare operatively. After from three to eight days the roentgenogram can be made.

In the roentgenograms exhibited by Dr. Saito, one saw a normal nerve (injected intraneurally) whose various bundles of fibers, 20 cc. in length, were plainly visible; then a perineural injection, in which the external and the internal layers were distinctly seen, and then a nerve with traumatic adhesions following an injury (which later could be broken up operatively). Great interest was shown in an injected nerve of a leprosy patient, whereby the nodulous thickening became readily visible; likewise the roentgenogram of a neuroma. An epidural injection of an emulsion of iodized poppy-seed oil made also the lumbosacral plexus easily recognizable. Lymphatic vessels were made visible in the same manner, particularly by injection of the fluid into the larger lymphatic vessels, such as the knee joint, the peritoneal cavity or the lymph glands. One could see how the contrast medium spreads out into the lymph paths. One could see a lymph vessel along the leg, following injection of the knee; an intercostal lymph vessel following peritoneal injection (both in man), and in a dog an intrathoracic lymph vessel, likewise following a peritoneal injection. In the field of arteriography, Dr. Saito secured with this method good results. In a case in which traumatic hemorrhage within the brain was suspected, he injected a 25 per cent solution of thorium dioxide into the superior thyroid artery, and not only the cerebral arteries became visible but also the capillaries and the veins. In more than 200 cases in which, during the past two years, the author applied such injections, he saw no evidence of serious injury.

During the discussion, various authors called attention to the poisonous nature of solutions of thorium dioxide as applied to animals, but Professor Pick pointed out that it is perhaps dangerous only in myelography and encephalography (as all other colloids) and should hence not be used by way of the cisterna magna. In any event, Dr. Saito emphasized in closing that, in his experiments, no damage to speak of had occurred in human beings; not even in connection with arteriography applied to gangrenous extremities.

Prof. Viktor von Hacker's Death

The death of Prof. Dr. Viktor von Hacker, formerly famous as a surgeon, in Vienna, at the age of 81, was recently announced. With von Hacker, the last of the assistants of Theodor Billroth has passed. After thorough training in pathologic anatomy, he entered, in 1880, the clinic of Billroth, who soon recognized his ability and chose him as his assistant. From this period came his research on the antiseptic treatment of wounds after the method of Lister. He soon became the head of the surgical department of the Vienna Policlinic and in 1895 was called to Innsbruck and in 1903 to Graz, as the head of the clinic. He remained the director of the latter institution until 1924 and brought about its reorganization. The scientific activity of von Hacker and his operative technic were fundamental mile-stones in the progress of surgery, especially for gastro-intestinal diseases. Retrocolic posterior gastroenterostomy, the technic of the construction and closure of the artificial anus, operations on the stomach in carcinoma and cicatricial stenosis, and the temporary exclusion of certain portions of the intestine were the results of his research and constituted some of the most important surgical contributions of that period. Surgery of the esophagus, esophagoscopy for the location of foreign bodies, mediastinotomy, surgery of diverticula and esophagoplasty were studied by von Hacker with fruitful results. His plastic operations on the nose and face and the treatment of fractures by means of the "Hacker triangle" (upper arm fracture) are widely known. The Graz clinic, formerly directed by von Hacker, was taken over a short time ago by Denk and later by Professor Walzel.

Marriages

LEO E. BRAUNSTEIN, Schenectady, N. Y., to Miss Anne Miller of Auburn, Maine, in Albany, N. Y., July 2.

MARGARET R. MACM. DOUGHERTY to Mr. Harry Sherman Hodge, both of Mount Holly Springs, Pa., July 5.

PAUL G. HANNA to Miss Mary Alice Barber, both of St. Joseph, Mich., in South Bend, Ind., June 17.

JOSEPH ROGERS YOUNG, Washington, D. C., to Miss Anne Beverley Sinclair of Manassas, Va., July 6.

WILLIAM RODGER GILMOUR, Philadelphia, to Miss Marjorie Roach of Princeton, N. J., June 15.

WILLIAM WAUGH TURNER, JR., to Miss Ruby Christina Gaskins, both of Nashville, Ga., July 2.

THOMAS CAMPBELL HOOTON to Miss Katharine Corbin Willis, both of New York, June 28.

BERTRAND M. HART, Onida, S. D., to Miss Jennette Hoggan of Rochester, Minn., June 22.

ARTHUR NORDEN BOLZ, Walnut, Ill., to Miss Marjorie Claire Muesse of Erie, June 18.

HARVEY VAN BUREN, Statesboro, Ga., to Miss Hazel Marie Davis of Marion, Ala., in June.

LOUIS J. LEVINSON, Newark, N. J., to Miss Beatrice E. Levine of New York, June 25.

CONRAD WALL, Boston, to Miss Nell Louise Kennedy of Columbus, Miss., June 14.

JOHN W. McDOWELL, Seattle, to Miss Kathryn Witmer of San Jose, Calif., June 10.

MANUEL SPIEGEL, Chicago, to Miss Janice Gottlieb of Kenosha, Wis., June 17.

KNUT REUTERSKIOLD, Chicago, to Dr. VIRGINIA JACKOLA of Polo, Ill., June 17.

THOMAS JAMES MERAR, Quincy, Ill., to Miss Iva Russakov of Chicago, June 18.

ROBERT BRUCE NYE, Philadelphia, to Miss Alice Barrow Stone, June 15.

DAVID L. MILLIKEN to Miss Sarah Gordon, both of New York, June 26.

JOSEPH W. SHAW, Seattle, to Miss Betty Gue of Portland, Ore., June 30.

BELLA LEWINSON, New York, to Mr. Morris M. Gilbert, July 18.

Deaths

Richard Smith Dewey @ La Cañada, Calif.; University of Michigan Medical School, Ann Arbor, 1869; chairman of the Section on Nervous and Mental Diseases, American Medical Association, 1901-1902; in 1896, president of the American Psychological Society, now the American Psychiatric Association; past president of the Chicago Neurological Society; served in the Franco-Prussian War; professor of mental and nervous diseases, Chicago Post-Graduate Medical School, 1893-1909; medical superintendent of the State Hospital for Insane, Kankakee, Ill., 1879-1893, and in charge of the Milwaukee Sanitarium, Wauwatosa, Wis., 1895-1921; aged 87; died, August 4.

Isador Abrahamson @ New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1894; clinical professor of neurology, University and Bellevue Hospital Medical College; member of the American Neurological Association and the Association for Research in Nervous and Mental Diseases; on the staffs of the Mount Sinai Hospital, Montefiore Hospital for Chronic Diseases, New York, the Brooklyn Hebrew Home and Hospital and the Jewish Hospital, Brooklyn; aged 61; died suddenly, July 16, at his home in Loon Lake, N. Y., of heart disease.

Henry Nelson Pulliam, Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1919; member of the Tennessee State Medical Association, and the Radiological Society of North America; assistant in roentgenology at his alma mater; served during the World War; aged 44; on the staff of the Memphis General Hospital, where he died, July 10, of heart disease.

Samuel Browning Locker, Menard, Texas; Memphis (Tenn.) Hospital Medical College, 1909; member of the State Medical Association of Texas; president of the Mason-Menard-McCulloch County Medical Society; served during the World War; aged 57; died, March 25, in Brownwood, of hypertrophic cirrhosis of the liver.

John Franklin Kidd, Ottawa, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1883; past president of the Canadian Medical Association; fellow of the American College of Surgeons; served during the World War; consulting surgeon to the Ottawa Civic Hospital; aged 69; died, July 13.

William Watson Conger @ Major, M. C., U. S. Army, New Haven, Conn.; Jefferson Medical College of Philadelphia, 1903; served during the Spanish-American and World wars; entered the medical corps of the U. S. Army in 1920 as a major; aged 61; died, June 29, of heart disease.

Enoch David Wall, Marianna, Ark.; University of Nashville (Tenn.) Medical Department, 1905; member of the Arkansas Medical Society; served during the World War; for many years health officer of Marianna; aged 52; died, July 9, of amebiasis and cerebral hemorrhage.

Samuel Bee Woodward, Asheville, N. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1920; for six years on the staff of the Veterans' Administration Home, Dayton; aged 37; died, June 18, in St. Joseph's Sanatorium, of pulmonary tuberculosis.

Harvey C. Powell @ Morgantown, W. Va.; Baltimore Medical College, 1902; served during the World War; past president of the Monongalia County Medical Society; on the staff of the Monongalia County Hospital; aged 52; died, June 30, of carcinoma of the liver.

Henry Ainsworth Yenetchi, Somerville, Mass.; University of Vermont College of Medicine, Burlington, 1879; member of the Massachusetts Medical Society; aged 76; died, June 9, in the Lawrence Memorial Hospital, Medford, of coronary thrombosis.

Rodolfo Eugene Monaco, Newport Beach, Calif.; University of Louisville (Ky.) School of Medicine, 1925; member of the Associated Anesthetists of the United States and Canada; aged 33; died, June 7, in Pasadena, Calif., of seminoma of the left testicle.

Henry Leland Noel, Lexington, Miss.; Memphis (Tenn.) Hospital Medical College, 1898; served during the World War; aged 64; died, May 14, in the U. S. Veterans' Hospital, number 63, Lake City, Fla., of pneumonia and diabetes mellitus.

Daniel Thomas O'Keefe, Boston; College of Physicians and Surgeons, Baltimore, 1892; member of the Massachusetts Medical Society; aged 66; died, June 22, in the Carney Hospital, of bronchopneumonia and cirrhosis of the liver.

Clarence Percy Burnett, Paducah, Ky.; University of Louisville School of Medicine, 1900; member of the Kentucky State Medical Association; formerly health officer of Paducah; aged 57; died, June 30, of carcinoma of the throat.

Cary F. Legge, Newark, Ohio; Ohio Medical University, Columbus, 1898; member of the Ohio State Medical Association; formerly county coroner; aged 65; died, July 8, of atrophic cirrhosis of the liver and toxemia.

Vacil Demetroff Bozovsky @ Dunkirk, N. Y.; University of Michigan Medical School, Ann Arbor, 1894; on the staff of Brook's Memorial Hospital; aged 67; died, June 24, of cerebral hemorrhage and myocarditis.

Everett Clark Moore, Brooklyn; University of Buffalo School of Medicine, 1928; aged 32; on the staffs of the New York Post-Graduate Hospital and the Bushwick Hospital, where he died, June 27, of pneumonia.

John Murdoch Pratt, National Military Home, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1908; aged 48; died, May 23, of lymphatic leukemia, chronic endocarditis and subacute pericarditis.

Charles Leland Allen, Wesleyville, Pa.; Medical Department of Western Reserve University, Cleveland, 1889; Jefferson Medical College of Philadelphia, 1892; aged 74; was found dead, July 2, of cerebral hemorrhage.

Willard Filmore Robinson @ Mars Hill, N. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1896; secretary of the Madison County Medical Society; aged 63; died, July 1, of angina pectoris.

Henry Hermann Kapp @ Winston-Salem, N. C.; Jefferson Medical College of Philadelphia, 1901; on the staff of the City Memorial Hospital; aged 53; was found dead, July 9, of a self-inflicted bullet wound.

Barney Burns Rogan, Selma, Ala.; Chattanooga (Tenn.) Medical College, 1896; member of the Medical Association of the State of Alabama; aged 57; died, July 1, in the King Memorial Hospital, of uremia.

William Hadley Parker @ Wellston, Ohio; Starling Medical College, Columbus, 1898; served during the World War; aged 61; died, June 24, in the White Cross Hospital, Columbus, of coronary thrombosis.

John B. Gordon, Stephenville, Texas; University of Georgia Medical Department, Augusta, 1880; member of the State Medical Association of Texas; aged 78; died suddenly, May 29, of heart disease.

Richard Fuller Harrell, Boulder, Colo.; Tulane University of Louisiana Medical Department, New Orleans, 1879; Gross Medical College, Denver, 1893; aged 79; died, June 27, of cerebral hemorrhage.

John Ballagi @ Homestead, Pa.; Medical Faculty of the Royal University Petrus Pázmány, Budapest, Hungary, 1881; on the staff of the Homestead Hospital; aged 75; died, April 10, of myocarditis.

Michael Mislig, New York; Cornell University Medical College, New York, 1902; member of the Medical Society of the State of New York; aged 65; died suddenly, June 28, of heart disease.

Martin Burke, New York; Bellevue Hospital Medical College, New York, 1876; member of the Medical Society of the State of New York; aged 77; died suddenly, July 10, of heart disease.

Edward Merle Frissell, Webster, Mass.; University of Vermont College of Medicine, Burlington, 1883; aged 73; died, April 11, in the Webster District Hospital, of cerebral hemorrhage.

Abraham Lincoln McIntyre, Petersburg, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1896; aged 67; died, June 30, of uremia, chronic interstitial nephritis and arteriosclerosis.

Worley George Martin, Rippey, Iowa; State University of Iowa College of Medicine, Iowa City, 1909; formerly member of the school board; aged 56; died, June 13, of heart disease.

William Kilpatrick Lane, Ocala, Fla.; Jefferson Medical College of Philadelphia, 1902; member of the Florida Medical Association; aged 55; died, June 9, of pulmonary tuberculosis.

John S. Terry, Ennis, Texas; Medical College of Evansville, Ind., 1883; member of the State Medical Association of Texas; aged 72; was killed, June 3, in an automobile accident.

Charles Hardy Bailey, Gardner, Mass.; Dartmouth Medical School, Hanover, N. H., 1881; member of the Massachusetts Medical Society; aged 76; was killed, July 12, by a t.

Irene May Morse, Clinton, Mass.; Tufts College Medical School, Boston, 1906; served during the World War; aged 66; died, June 20, in the Clinton Hospital, of chronic nephritis.

Gabriel Amoros, Rio Piedras, P.R.; Bennett Medical College, Chicago, 1915; member of the Medical Association of Puerto Rico; aged 46; died, April 27, of angina pectoris.

John R. Sharp, Washington, D. C.; Hahnemann Medical College and Hospital of Philadelphia, 1901; aged 57; died, July 10, of cerebral embolus and coronary thrombosis.

Sarah Marinda Loguen Fraser, Washington, D. C.; Syracuse University College of Medicine, 1876; aged 83; died, April 9, of bronchopneumonia and fracture of the femur.

Augustine Ben Childs, Keithsburg, Ill.; Rush Medical College, Chicago, 1908; served during the World War; aged 52; died, May 28, in Evanston, of hypertension.

Leonidas Shriver Patterson, Unionville, Iowa; Medical College of Ohio, Cincinnati, 1884; aged 73; died, June 16, of chronic nephritis and cerebral hemorrhage.

Matthew C. Freilinger, Baltimore; University of Maryland School of Medicine, Baltimore, 1906; aged 59; died, July 5, of carcinoma of the right lung.

Caroline A. Stevens Frizzell, Redlands, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1875; aged 88; died, June 7, of coronary occlusion.

Jacob Lachowski, New York; University of Vladimara, Kiev, Russia, 1894; aged 62; died, July 11, of chronic myocarditis and coronary thrombosis.

Rufus E. Mathias, Irmo, S. C.; Medical College of the State of South Carolina, Charleston, 1905; aged 54; died, July 7, of cerebral hemorrhage.

Walter H. Brissenden, Roundup, Mont.; American College of Medicine and Surgery, Chicago, 1905; aged 58; died, June 6, of coronary embolism.

John Olson, Minneapolis; College of Medicine and Surgery, Chicago, 1909; aged 53; died, June 28, of diabetes mellitus and coronary occlusion.

James Robert Harvey, Vale, Ore.; Rush Medical College, Chicago, 1889; aged 73; died, April 2, in the Eugene (Ore.) Hospital, of paracystitis.

William L. Schutter, Albany, N. Y.; Albany Medical College, 1883; aged 70; died, July 7, in St. Peter's Hospital, of carcinoma of the larynx.

Albert Decatur Barr, Cherry Valley, Ark.; Joplin (Mo.) College of Physicians and Surgeons, Joplin, 1883; aged 72; died, July 3, of nephritis.

Myron A. Martin, Chicago; Chicago Physio-Medical College, 1898; aged 64; died, July 12, of carbon monoxide poisoning, self-administered.

Thomas D. Farrer, Caldwell, Idaho; Barnes Medical College, St. Louis, 1901; aged 64; died, May 22, of acute dilatation of the heart.

William L. Rieff, Perryville, Ark.; University of Louisville (Ky.) School of Medicine, 1891; aged 73; died, June 30, of endocarditis.

Gross Scruggs Chapman, Jackson, Ala.; Medical College of Alabama, Mobile, 1879; aged 77; died, June 25, of valvular heart disease.

Alonzo White, Palmyra, Mo.; Jefferson Medical College of Philadelphia, 1865; aged 91; died, June 25, of hepatic carcinoma.

William Claiborne Graves, Borger, Texas; Missouri Medical College, St. Louis, 1897; aged 65; died, July 1, of pneumonia.

Coyle J. Tracy, Pasadena, Calif.; Baltimore Medical College, 1897; aged 65; died, June 17, of hemorrhage from the duodenum.

James M. Webb, Ooltewah, Tenn.; Chattanooga (Tenn.) Medical College, 1900; aged 63; died, June 15, of chronic arthritis.

Sandy A. Moir, Francisco, N. C.; College of Physicians and Surgeons, Baltimore, 1886; aged 70; died, May 29, of pellagra.

Clarence D. Harris, Morley, Mo.; Missouri Medical College, St. Louis, 1895; aged 58; died, July 4, of heart disease.

William O. Thomas, Irving, Texas (licensed, Texas, under the Act of 1907); aged 52; died, June 21, of acute pellagra.

Cecil R. Price, Starks, La.; Memphis (Tenn.) Hospital Medical College, 1912; aged 50; died, June 3, of heart disease.

Samuel D. Hodge, Bald Knob, Ark. (licensed, Arkansas, 1903); aged 65; died suddenly, June 28, of heart disease.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

Mul-So-Lax.—Mul-So-Lax Laboratories, Inc., Kalamazoo, Mich. Composition: Petroleum oil (34 per cent) and phenolphthalein, emulsified with water. For chronic appendicitis, "liver troubles," colitis, etc. Fraudulent therapeutic claims.—[N. J. 18742; May, 1932.]

Mag-Net-O Balm.—Magneto Balm, Inc., Baltimore. Composition: Tar, red pepper, mustard oil, turpentine oil and methyl salicylate incorporated in petrolatum. For rheumatism, headaches, etc. Fraudulent therapeutic claims.—[N. J. 18744; May, 1932.]

Brown's Bronchial Troches.—John I. Brown and Son, Boston. Composition: Extracts of licorice and cubeb, sugar, starch and a gum such as acacia. Fraudulent therapeutic claims.—[N. J. 18747; May, 1932.]

Lavodin.—Lavodin Co., Oakland, Calif. Composition: Small quantities of potassium iodide, common salt, horax, oil of cinnamon and glycerin together with 7.9 per cent of alcohol, and water. Falsely claimed to be antiseptic. Fraudulent therapeutic claims.—[N. J. 18928; June, 1932.]

Minton's Asthma, Hay Fever and Catarrh Remedy.—D. L. Minton, Sidney, Ohio. Composition: Potassium iodide, a trace of plant extractives and water. Fraudulent therapeutic claims.—[N. J. 18930; June, 1932.]

Wilson's Chloro-Inhaler.—Western Pacific Chemical Co., Seattle, Wash. Composition: A glass inhaler containing a cloth impregnated with menthol, a small quantity of a chlorine-yielding compound, a calcium salt, chloride and carbouate. For hay fever, influenza, headaches, etc. Fraudulent therapeutic claims.—[N. J. 18931; June, 1932.]

Davies' Geng-Seng.—Davies' Geng-Seng Co., Los Angeles. Composition: Powdered ginseng root, aloe, epsom salt, baking soda and sugar. For indigestion, bleeding gums, catarrh, asthma, etc. Fraudulent therapeutic claims.—[N. J. 18932; June, 1932.]

Mason's Cream of Olives Ointment.—Aschenbach and Miller, Inc., Philadelphia. Composition: Essentially camphor in a fatty ointment base. For catarrh, sore throat, skin eruptions, etc. Fraudulent therapeutic claims.—[N. J. 18933; June, 1932.]

Dr. Jones' Formula Grip and Cold Tablets.—J. F. Stras, LaCrosse, Wis. Composition: Acetanilid, camphor and extract of a laxative drug, red pepper and starch. Fraudulent therapeutic claims.—[N. J. 18935; June, 1932.]

Norwesco Laxative Cold Tablets.—Blumauer Frank Drug Co., Portland, Ore. Composition: Acetanilid, quinine, camphor, red pepper, a bromide and a laxative plant drug extract. Fraudulent therapeutic claims.—[N. J. 18936; June, 1932.]

Page's Cru-Mo Salve.—W. H. King Drug Co., Raleigh, N. C. Composition: Essentially volatile oils, including methyl salicylate, menthol, camphor, eucalyptus and pine oil in an ointment base of petrolatum, paraffin and wool fat. For croup, neuralgia, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18937; June, 1932.]

Pheno-Septol.—Pheno-Septol Co., Inc., Rochester, N. Y. Composition: Small quantities of carbolic acid, a salicylate, a borate, alcohol, a potassium salt, flavoring and coloring, with water. Falsely claimed to be germicidal. For tonsillitis, laryngitis, catarrh, piles, typhoid fever, etc. Fraudulent therapeutic claims.—[N. J. 18938; June, 1932.]

Phen-Amy-Caps.—Franklin Laboratory, Portland, Maine. Composition: Capsules containing phenacetine, amidopyrine, caffeine and an extract of a mydriatic drug, such as hyoscyamus. Misbranded because phenacetine not properly declared and because of fraudulent therapeutic claims. Claims to relieve pain, etc.—[N. J. 18939; June, 1932.]

B-J-C Capsules.—Cline Medicine Co., Poplar Bluff, Mo. Composition: Salo (2.6 grains per capsule), copaiba, santal oil and sulphur. For cystitis, gonorrhea, etc. Fraudulent therapeutic claims.—[N. J. 18941; June, 1932.]

Angell's Cough Syrup.—James R. Angell, New Orleans. Composition: Sugar, alcohol, water and a small quantity of plant drug extract including tannin. Fraudulent therapeutic claims.—[N. J. 18942; June, 1932.]

Kitchel's (S. B.) Liniment.—S. B. Kitchel Co., Coldwater, Mich. Composition: Ammonia (4 per cent), sodium and potassium carbonates (1 per cent), traces of iron sulphate and tannin, with approximately 95 per cent of water. Fraudulent therapeutic claims.—[N. J. 18944; June, 1932.]

Servex.—Burnham-Snow Products Co., Hollywood, Cal. Composition: Essentially boric acid (86 per cent), oxyquinoline sulphate and quinine sulphate. A "vaginal protective powder." Fraudulent therapeutic claims.—[N. J. 18946; June, 1932.]

Hy-Ko.—Hy-Ko Co., Longview, Wash. Composition: Essentially benzoic acid (5.9 per cent), alcohol (11.4 per cent by volume), sugar and water. For influenza, hay fever, chills, etc. Misbranded because alcohol content not declared and because of fraudulent therapeutic claims.—[N. J. 18956; June, 1932.]

Melo.—McKesson Western Wholesale Drug Co., Ltd., Los Angeles. Composition: Essentially zinc chloride and iodide, glycerine, alcohol (6 per cent) and water. Falsely claimed to be antiseptic. For mouth, nose and throat disorders. Fraudulent therapeutic claims.—[N. J. 18958; June, 1932.]

Lithiated Sorghum Compound.—Sharp & Dohme, Inc., Philadelphia. Composition: Lithium benzoate, lithium citrate, alcohol, sugar and water, with extracts of plant drugs, including hydrangea. For cystitis, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18961; June, 1932.]

Best's Vaginal Cones.—Best Cone Co., New York. Composition: Boric acid and quinine sulphate in a cocoa butter base. "Uterine tonic," etc. Fraudulent therapeutic claims.—[N. J. 18962; June, 1932.]

Denn's Compound.—Denn's Rheumatic Cure Co., Columbus, Ohio. Composition: Essentially extracts of plant drugs, including a laxative such as cascara sagrada, with sodium benzoate, sugar, alcohol and water. For kidney and liver disorders, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 18968; June, 1932.]

Hick's Epsom Salts Compound Tablets.—Charles M. Hick & Co., Chicago. Composition: Essentially epsom salt (4 grains per tablet) and aloe. Adulterated and misbranded because below professed standard of strength.—[N. J. 18969; June, 1932.]

Co-Liv-Ol.—Silmo Chemical Co., Inc., Vineland, N. J. Composition: Essentially a fish oil, calcium and magnesium carbonates, small quantities of iron and aluminum compounds, and water. Contained no vitamin D. Fraudulent therapeutic claims.—[N. J. 18972; June, 1932.]

Harding's 444.—Harding Drug Co., Jackson, Miss. Composition: Essentially potassium iodide, mercuric chloride, laxatives such as cascara sagrada, alcohol (4.6 per cent by volume), glycerine and water. For blood disorders, rheumatism, etc. False declaration of alcohol content. Fraudulent therapeutic claims.—[N. J. 18973; June, 1932.]

Vilane Powder.—Blackburn Products Co., Dayton, Ohio. Composition: Essentially borax, salt, baking soda and small quantities of thymol, menthol, methyl salicylate and eucalyptol. For catarrh, cystitis, diarrhea, etc. Falsely claimed to be a disinfectant. Fraudulent therapeutic claims.—[N. J. 18974; June, 1932.]

Angeline.—Angeline Corporation, Hamilton, Ohio. Composition: Extracts of plant drugs (including laxatives), sodium salicylate, flavoring material, alcohol and water. For rheumatism, neuralgia, etc. Fraudulent therapeutic claims.—[N. J. 19026; July, 1932.]

Magle Salve Heal-Al.—Ericka Mfg. Co., Inc., Springfield, Mass. Composition: Essentially petrolatum with 6 per cent of peppermint oil. For skin disorders, piles, catarrh, pneumonia, asthma, etc. Fraudulent therapeutic claims.—[N. J. 19027; July, 1932.]

Steketee's Neuralgia Drops.—Hazelton & Perkins Drug Co., Grand Rapids, Mich. Composition: Essentially balsam of Peru, alcohol (45.6 per cent), water, and a small quantity of volatile oils. Fraudulent therapeutic claims.—[N. J. 19028; July, 1932.]

Grafanol Ointment.—R. F. Grafa & Sons, Durant, Okla. Composition: Petroleum products (61.5 per cent), mineral matter (8 per cent) and water (30.5 per cent). For skin cancers, sore throat, nasal catarrh, piles, rheumatism, etc. Fraudulent therapeutic claims.—[N. J. 19029; July, 1932.]

Kojene.—Kojene Products Corporation, Buffalo, N. Y. Composition: Essentially oxyquinoline sulphate and water, flavored with methyl salicylate. For skin and mouth disorders, catarrh, eczema, and as a "preventive." Fraudulent therapeutic claims.—[N. J. 19032; July, 1932.]

Kojenol.—Kojene Products Corporation, Buffalo, N. Y. Composition: Essentially oxyquinoline sulphate, a small quantity of resinous material and water. For pyorrhea. Fraudulent therapeutic claims.—[N. J. 19032; July, 1932.]

Marvel Ointment.—White & Kleppinger, Inc., Chicago. Composition: Essentially volatile oils (35 per cent, mostly methyl salicylate) in an ointment base (65 per cent) of petrolatum and paraffin. For rheumatic pains, asthma, catarrh, pneumonia, etc. Fraudulent therapeutic claims.—[N. J. 19034; July, 1932.]

Mother's Joy Rice's Salve.—Rice Chemical Co., Greensboro, N. C. Composition: Essentially kerosene, methyl salicylate, camphor, menthol and eucalyptol, in a petrolatum base. For sore throat, bronchitis, pneumonia, catarrh, asthma, skin eruptions, etc. Fraudulent therapeutic claims.—[N. J. 19037; July, 1932.]

Kelpor (H. H. Brooten's Mineral).—P. A. Tucker, Portland, Oregon. Composition: Mainly aluminum silicate and iron oxide, with a small quantity of other iron and magnesium compounds, including sulphate and phosphate, with traces of calcium compounds and sulphate. For diabetes, anemia, gastritis, etc. Fraudulent therapeutic claims.—[N. J. 19045; July, 1932.]

Jenkins' Rheumatic Medicine.—McKesson Parker Blake Co., New Orleans. Composition: Salicylic acid (about 1½ grains to the tablespoonful), a small quantity of a plant drug, alcohol (32 per cent by volume), and water, flavored with anise oil. Misbranded because of fraudulent therapeutic claims and false statement of alcohol content.—[N. J. 19048; July, 1932.]

Taylor's Royal Brand Green Seal Pills.—Horace B. Taylor Co., Philadelphia. Composition: Essentially iron (ferrous) sulphate (0.26 grain each), ginger, licorice, aloe and a small quantity of soap. For "menstrual disorders." Fraudulent therapeutic claims.—[N. J. 19053; July, 1932.]

Correspondence

STATISTICAL STUDIES OF DIABETES

To the Editor:—I have recently come across some interesting figures, which throw light on the value of statistical studies based solely on official mortality figures.

Godias J. Drolet in *THE JOURNAL*, March 11, reported diabetes mortality in New York City during the thirty year period 1901-1931. The curves which he showed apparently proved an increase in the number of females as opposed to males, in whom diabetes is given as the primary cause of death. I obtained from Mr. Drolet the original figures reported by the New York department of health and have compared them with the figures which are officially reported by the Census Bureau for New York City.

Mr. Drolet in the *New York Times* of May 21 states that he understands that the local practice in the New York City

Deaths and Death Rates per Hundred Thousand from Diabetes Mellitus by Sex, 1901 to 1931

| Year | Males | | Females | | Total | | Death Rate | | Difference, per Cent |
|------|-------|-------|---------|-------|-------|-------|------------|-------|----------------------|
| | U. S. | N. Y. | U. S. | N. Y. | U. S. | N. Y. | U. S. | N. Y. | |
| 1901 | 265 | 269 | 232 | 234 | 497 | 503 | 14.0 | 14.2 | -1 |
| 1902 | 224 | 212 | 247 | 239 | 471 | 471 | 12.9 | 12.8 | -1 |
| 1903 | 248 | 232 | 275 | 256 | 518 | 488 | 13.7 | 12.9 | +4.6 |
| 1904 | 238 | 233 | 350 | 316 | 635 | 549 | 16.4 | 14.1 | 16.3 |
| 1905 | 296 | 256 | 360 | 323 | 656 | 589 | 16.4 | 14.6 | 15.1 |
| 1906 | 306 | 281 | 401 | 371 | 701 | 652 | 16.8 | 15.6 | 7.7 |
| 1907 | 275 | 251 | 400 | 413 | 735 | 664 | 17.0 | 15.4 | 10.4 |
| 1908 | 323 | 290 | 418 | 380 | 741 | 670 | 16.5 | 15.0 | 11.3 |
| 1909 | 327 | 258 | 447 | 408 | 774 | 696 | 16.7 | 15.0 | 10.6 |
| 1910 | 380 | 320 | 515 | 448 | 895 | 768 | 18.7 | 16.0 | 16.6 |
| 1911 | 406 | 316 | 518 | 423 | 924 | 739 | 19.0 | 15.2 | 20.0 |
| 1912 | 391 | 362 | 584 | 505 | 975 | 870 | 18.6 | 17.5 | 6.3 |
| 1913 | 421 | 366 | 588 | 518 | 1,009 | 884 | 20.0 | 17.5 | 14.3 |
| 1914 | 475 | 409 | 641 | 570 | 1,116 | 979 | 21.7 | 19.1 | 13.7 |
| 1915 | 520 | 462 | 730 | 647 | 1,250 | 1,109 | 24.1 | 21.2 | 18.7 |
| 1916 | 508 | 470 | 702 | 649 | 1,210 | 1,110 | 22.8 | 21.1 | 8.0 |
| 1917 | 536 | 473 | 775 | 680 | 1,311 | 1,153 | 24.3 | 21.4 | 18.3 |
| 1918 | 504 | 410 | 721 | 601 | 1,225 | 1,011 | 22.3 | 18.4 | 21.2 |
| 1919 | 450 | 380 | 703 | 575 | 1,153 | 955 | 21.2 | 17.1 | 24.0 |
| 1920 | 515 | 411 | 812 | 664 | 1,328 | 1,075 | 23.4 | 18.9 | 23.8 |
| 1921 | 521 | 428 | 866 | 692 | 1,387 | 1,120 | 23.0 | 19.3 | 23.8 |
| 1922 | 658 | 581 | 975 | 867 | 1,633 | 1,448 | 27.4 | 24.4 | 12.5 |
| 1923 | 615 | 512 | 1,008 | 849 | 1,623 | 1,360 | 26.7 | 22.4 | 19.3 |
| 1924 | 541 | 424 | 960 | 753 | 1,501 | 1,177 | 24.2 | 19.0 | 27.2 |
| 1925 | 573 | 487 | 947 | 826 | 1,520 | 1,313 | 24.0 | 20.8 | 15.3 |
| 1926 | 575 | 517 | 1,068 | 968 | 1,643 | 1,485 | 25.5 | 23.0 | 10.0 |
| 1927 | 532 | 492 | 1,049 | 969 | 1,581 | 1,461 | 24.0 | 22.2 | 8.1 |
| 1928 | 581 | 542 | 1,206 | 1,121 | 1,787 | 1,668 | 26.6 | 24.8 | 7.3 |
| 1929 | 629 | 593 | 1,184 | 1,133 | 1,813 | 1,726 | 26.5 | 25.3 | 4.7 |
| 1930 | 634 | 615 | 1,237 | 1,169 | 1,861 | 1,784 | 26.7 | 25.6 | 4.3 |
| 1931 | 691 | 633 | 1,413 | 1,288 | 2,104 | 1,921 | 29.7 | 27.1 | 0.6 |

department of health, where several associated causes of death have been listed, has been to give preference to a medical determination of the more likely primary cause rather than to follow mechanically the rules of the Manual of Joint Causes of Death, and states that this practice has been maintained under the direction of Dr. William H. Guilfooy, just retired after forty years of service in charge of the New York bureau of records.

The official mortality figures for New York City which are reported by the Census Bureau, on the other hand, it may be assumed, are reported after the classification as to primary and secondary causes, which is made in Washington according to the Manual of Joint Causes, this being the standard procedure employed by the Census Bureau itself.

It is therefore of considerable interest to compare over a period of thirty years two different methods of classifying these mortality figures for diabetes, bearing in mind that discrepancies are bound to occur when different methods of classification are in use, and are particularly apt to be marked in mortality figures for diabetes and for cancer.

The accompanying table shows for each year the number of males and females and total deaths as reported by the New

York department and by the Census Bureau, marked "N. Y." and "U. S.," respectively. Another column shows the difference in the death rate figured on the total number of deaths in each case, and the last column shows the percentage of discrepancy which these two systems of practice have shown.

It would seem that there are many personal factors entering into the classification of primary and secondary causes of death, for in no other way could two systems get such irregularly distributed differences in coding the same certificates.

Physicians object to crediting to diabetes a death which is due to a perforated appendix or to lobar pneumonia just because the patient is known to have had mild, though thoroughly cared for, diabetes. This occurs as a routine in the use of the Manual of Joint Causes and constitutes an injustice to modern diabetes therapy.

It has been my contention that the increase in hospitalization and its attendant increase in accuracy of diagnosis, coupled with the use of the Manual of Joint Causes, are responsible for official figures the significance of which is doubtful.

JAMES RAGLAN MILLER, M.D., Hartford, Conn.

PRECIPITATION TESTS FOR SYPHILIS

To the Editor:—On visiting the venereal disease exhibit of the United States Public Health Service at the Chicago Century of Progress Exposition I saw a statement which, in my opinion, is not alone incorrect but, in addition, does a grave injustice to American science. I refer to the statement which lists Meinicke as the originator of the precipitation test for syphilis.

Ten years before Meinicke began to write on precipitation with syphilitic serums, Michaelis (1907) published his "Precipitinreaktion bei Syphilis." In 1910, Jacobstahl reported a precipitation test which required the dark field microscope to read the results. In 1911, Bruck and Hidaka showed that, by modifying the technic, the use of the microscope was not necessary. In 1915, Hecht published a precipitation method of his own. In 1917, Meinicke published a "water and salt solution" method based on precipitation. In 1918, Sachs and Georgi published a precipitation test which bears their names. In the same year, Meinicke abandoned the "water and salt solution" method and published what he called the "third modification." Then came Dold in 1921 with his "turbidity test" for syphilis, and in 1922 Meinicke's "third modification" was discarded in favor of a "turbidity test" with cholesterol. But this test, too, was short lived, for in 1923 Meinicke discarded this test in favor of a turbidity test with the use of balsam instead of cholesterol. (Balsam was also used in a precipitation test suggested by de la Riviere and Gallerand.)

It was this last turbidity test with a special microprocedure as a check method that Meinicke employed at the League of Nations conference at Copenhagen in 1928. As is well known, the Kahn test was more sensitive than the Meinicke method in syphilitic cases, while in the nonsyphilitic group the Meinicke test gave nine false positive reactions and the Kahn test none. The results of this conference led Meinicke to abandon the "turbidity test" and develop the so-called clarification test—a precipitation method in which the precipitate settles out after overnight incubation, giving a clear supernatant fluid. But at the Montevideo conference of the League of Nations Health Committee in 1930, the Kahn reaction was again more sensitive than Meinicke's clarification test in syphilitic cases, while in the nonsyphilitic group the clarification test gave seven false positive reactions and again the Kahn test gave no false positives. Meinicke's latest method is clarification test II.

In the face of these facts one cannot help but wonder how Meinicke can be listed as the originator of the precipitation test for syphilis by so important a scientific body as the U. S. Public Health Service. Credit for the very first work along the lines

of precipitation tests should obviously go to Michaelis or to Jacobstahl or to both. But credit for the first practical method that has stood the test of time during an entire decade, a test that is universally acknowledged to be based on outstanding studies governing the phenomenon of precipitation in syphilis, a test that proved its superiority at two international competitive conferences sponsored by the League of Nations Health Committee, one that has forced improved modifications of numerous Wassermann tests all over the world and has been the forerunner of practically all precipitation tests during the past decade is obviously the American developed Kahn reaction. I say "American developed" advisedly, for in a recent issue of the *Medizinische Klinik* Dr. Meinicke himself points out that there is no reason for German physicians to use the American developed Kahn test when German-Austrian methods are available.

ISRAEL WEINSTEIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECT OF SPORTS ON COMPENSATED HEART DISEASE

To the Editor:—Is there any good evidence that strenuous sports such as football and basketball are harmful to boys with well compensated valvular lesions of the heart? A rapidly growing boy with mitral stenosis and hypertrophy played both football and basketball, contrary to my advice, throughout his high school course, without any apparent injury. I have now under observation two high school boys with slight mitral stenosis, with no enlargement of the heart, who have never suffered from any cardiac symptoms and have perfect compensation. In one case there have been several attacks of rheumatic fever, in the other case scarlet fever and some vague "growing pains." One of these boys plays both football and basketball; the other plays basketball and is a star gymnast. In both cases, athletic sports seem to improve the boys' general condition and have no demonstrable bad effects on the heart. On the other hand, I once had a patient with combined aortic and mitral lesions of rheumatic origin who died of heart failure at the age of 23; he had always been active in athletics and I thought his athletic activities had probably contributed to his early death. If you answer this question in *THE JOURNAL* please omit name and address.

M.D., Pennsylvania.

ANSWER.—There have been published no satisfactory statistical studies to show whether or not strenuous sports such as football and basketball are harmful to boys with "well compensated" valvular lesions of the heart. The experience has been a common one that strenuous sports seem sometimes to harm and sometimes to benefit growing boys with valvular disease. Undoubtedly several factors enter in besides the mere existence of the heart trouble; among these factors the two most important are the degree of valvular involvement and the occurrence of infection, particularly of the rheumatic type. The more marked the valve lesions and the more valves involved, the more likely is the heart to be affected unfavorably by strenuous exertion; heart size, which may also be used as a prognostic aid (the larger the heart, the worse the prognosis), is in these youths with chronic valvular disease primarily dependent on the degree and number of valve lesions. Relatively slight involvement of the mitral valve is only a slight handicap for the heart, and the possessor of such a heart may live practically a normal life and respond to exercise with favorable effect like a normal person, while marked mitral stenosis, marked aortic regurgitation, and especially the combinations of the two are considerable burdens which may prove too much for a heart when it is subjected to exhausting physical effort. Severe rheumatic fever, through its effect on the heart muscle as well as on the endocardium and pericardium, may precipitate heart failure in an individual with or without valvular heart disease; the occurrence of such infection is favored by catching a cold, which in turn is more apt to come with exhaustion and exposure to cold and wet.

It is in general wise to advise that any youth with any degree of rheumatic valvular heart disease be protected from the extreme exertion incident to the most strenuous sports, such as football, basketball and hockey, but that the less strenuous sports, such as baseball, tennis and golf, be permitted when the heart disease is only slight or moderate. Exercise in moderation is more likely to be helpful than harmful except when the

valvular disease is extreme, when only the mildest exercise, such as walking, should be allowed. These general rules are safe to follow; but there are always exceptions and each case must be judged individually on its merits because of the complexity of the factors involved, which include rapidity of growth, general health, temperament, familial health and longevity, and family resources.

SENSITIZATION TO GRASSES

To the Editor:—Will you kindly give me an opinion as to the following case and treatment you would suggest? Recently I tested a hay fever patient for susceptibility, using a Parke Davis diagnostic outfit containing groups 28 to 31 inclusive (Gramineae, Chenopodiaceae, Ambrosiaceae and Artemisia). She showed some reaction to each of the groups, apparently, particularly to group 31. Later I repeated the test more carefully and on this occasion she reacted to groups 28 and 31. I had not supposed there were any of the artemisia grasses about, but the reaction was definite in each case. Is there a combination of these groups available or would you suggest the Parke Davis group 31 alone? Please omit name.

M.D., Massachusetts.

ANSWER.—In the district cited the Artemisia family of plants is not present; hence they cannot be a factor in hay fever and there is no necessity for treating the patient with any pollen of this group. The Artemisia are, however, fairly closely related to the ragweeds, so that many ragweed-sensitive patients also give a positive skin test to the sages (Artemisiae). This may explain the reaction of the patient to the latter. It should also be ascertained whether the patient has not formerly lived in western parts of the United States, where she may have acquired a sensitiveness to the Artemisia pollen.

Presumably the patient resides in the locality mentioned. The seasons in which the symptoms occur are not stated. At any rate, the patient should have tests with the tree pollens (probably cottonwood, maple, oak, elm and ash), grass pollens (probably timothy, June grass and orchard grass) and ragweed pollen (short ragweed). The latter is the only important fall hay fever plant in the district. These tests should be made with the individual pollen extracts and not with groups. Group testing may result in weak or negative reactions, whereas one of the pollens of the group may give a strong reaction by individual testing.

After tests are made and treatment is considered, it should be remembered that before any pollen is used in treatment it must fulfil all the following requirements:

1. The season of pollination of the plants must correspond to the time when the patient has symptoms.
2. The plant must be wind pollinated.
3. It must be present in the district in which the patient lives.
4. The plant must be abundant and must be a good pollinator.
5. The patient must evidence a positive test with the pollen.

If these rules are adhered to, many of the pollens may be left out of consideration in treatment. If the patient is sensitive to more than one pollen of the same group and of the same season (the grasses, for example) they may be combined in one treatment mixture. Under no circumstances should shotgun mixtures of the type which the inquirer describes be used as a routine in diagnosis and especially in treatment.

"RADIO DEATH FIGHTERS" OR HYPERPYREXIA IN DEMENTIA PARALYTICA AND SYPHILIS

To the Editor:—A patient of mine suffering from locomotor ataxia brings to me an article published in the April, 1933, issue of the *Country Gentleman*, entitled "Radio Death Fighters," by Paul de Kruif. This is some sort of electrical treatment recommended for his condition and he wants my advice as to his trying it. A letter from the editor of that magazine states that he thinks that they will be able to install their machine in hospitals within the near future at a figure which will enable hospitals to go in for it. I have never heard of the treatment before and would like any information you may be able to give me about it. Please omit name.

M.D., Pennsylvania.

ANSWER.—The fever-producing apparatus referred to by de Kruif is a 1 kilowatt short wave radio transmitter, developed by Willis R. Whitney of the General Electric Company. The essential difference between a transmitter used for transoceanic broadcasting and the apparatus used for therapeutic fever production is that the energy is concentrated between two large condenser plates instead of being directed from an aerial. The name "radiotherm" has been applied to the altered radio transmitter. The heating effect is produced by a vacuum tube oscillator, composed of two 500 watt radiotrons, producing a high frequency field of approximately 10,000,000 cycles per second (30 meter waves) between the condenser plates. The patient lies on a stretcher between the plates. No contact electrodes are used.

Many other methods have been used for artificial fever production, such as diathermy, hot baths, hot air and electric blankets, as well as inoculations with malaria, rat bite fever and relapsing fever. The purpose of experimentation with fever production by physical methods has been to provide a suitable substitute for inoculation methods. The few reports that have appeared in medical literature seem to indicate that the therapeutic value of fever induced by physical methods is comparable to the results that have been obtained with malaria inoculations. The development of the various forms of apparatus is still in the experimental stage. The employment of the various types of electrical apparatus for fever production should be restricted to institutions, under the direct supervision of physicians who have thoroughly familiarized themselves with the physical and technical principles involved.

The following references will provide further information regarding the various methods employed and the results that have been obtained:

- Neymann, C. A., and Osborne, S. L.: Artificial Fever Produced by High Frequency Currents, *Illinois M. J.* 56: 199 (Sept.) 1929.
King, J. C., and Cocke, N. W.: Therapeutic Fever Produced by Diathermy with Special Reference to Its Application in the Treatment of Paresis, *South. M. J.* 23: 222 (March) 1930.
Neymann, C. A., and Osborne, S. L.: A New Method of Producing Fever: The Treatment of General Paresis, *Physiotherapy Rev.* 11: 47 (March-April) 1931.
Neymann, C. A., and Koenig, M. T.: Treatment of Dementia Paralytica: Comparative Therapeutic Results with Malaria, Rat-Bite Fever and Diathermy, *THE JOURNAL*, May 30, 1931, p. 1858.
Perkins, C. T.: Diathermy Treatment of Dementia Paralytica, *Am. Med.* 27: 546 (Sept.) 1931.
Wilgus, S. D., and Lurie, Leah: The Fever Treatment of General Paresis by Means of the Diathermy Current and the Electric Blanket, *Illinois M. J.* 60: 341 (Oct.) 1931.
Bishop, F. W.; Horton, C. B., and Warren, S. L.: A Clinical Study of Artificial Hyperthermia Induced by High Frequency Currents, *Am. J. M. Sc.* 184: 515 (Oct.) 1932.
Schamberg, J. F., and Butterworth, Thomas: Diathermy in the Treatment of General Paralysis and in Wassermann-Fast Syphilis, *Am. J. Syph.* 16: 519 (Oct.) 1932.
Carpenter, C. M., and Warren, S. L.: Artificially Induced Fever in the Treatment of Disease, *New York State J. Med.* 32: 997 (Sept. 1) 1932.
Hinsie, L. E., and Carpenter, C. M.: Radiothermic Treatment of General Paresis, *Psychiat. Quart.* 5: 215 (April) 1931.
Hinsie, L. E., and Blalock, J. R.: Treatment of General Paralysis by Radiothermy, *Psychiat. Quart.* 6: 191 (April) 1932.
Tenney, C. F.: Artificial Fever Produced by the Short Wave Radio and Its Therapeutic Application, *Ann. Int. Med.* 6: 457 (Oct.) 1932.

TREATMENT OF SYPHILIS

To the Editor:—I have been treating a young man for syphilis since July, 1928. He came in the early secondary stage. He had gone to another doctor at first, as he did not want me to know that he had it, I being the family physician. Here he had local treatment for his chancre for about a month. The Wassermann (Kolmer technic) was 4 4 4 4 4. I treated him with nearsphenamine, giving him six or eight weekly injections, then gave him a rest period (for which I am now sorry) and then put him on mercury by inunction, mercurial ointment, which he rubbed in faithfully. In September, 1928, the Wassermann reaction was 3 4 4 2 0. In April, 1929, it was 3 3 3 0 0. In June, 1929, it was 2 2 2 0 0. In September, 1929, it was 2 2 0 0 0. I then gave him an ampule of "Biliposol" every week for fifteen weeks and then changed him to inunctions with small doses of potassium iodide. Following this it was negative in all dilutions. I then did not see how I could keep him on bismuth indefinitely, and no longer trusted the nearsphenamine, so I got some arsphenamine and gave him ten weekly intravenous injections of 0.4 Gm. Following this his reading was 4 4 4 1 0. I then realized that he did better on bismuth than on arsenic, and put him back on the Biliposol, of which he has had fifteen intramuscular injections and one of iodobismutol. The negative Wassermann reaction was in March, 1932. I have been unable to get him to go to any one else, cannot refer him to an expert, and am rapidly learning that I do not come in that category myself. He has no neurologic symptoms, and I have never had his spinal fluid examined. His general condition seems good. I rather think he will be negative now, after this last series of Biliposol, preceded by a thorough course of mercurial inunctions with mercurial ointment and potassium iodide, 10 grains (0.65 Gm.) twice daily. If you can give me any help, please do so. When I first began to treat him he developed a slight to moderate albuminuria. He had had tonsillitis and after I removed the tonsils the albuminuria cleared up and has never returned. He seems to stand the arsenic, bismuth and iodide perfectly well. Please omit name and address.

M.D., Texas.

ANSWER.—It would appear that the patient is tolerant to all the drugs commonly employed in the treatment of early syphilis. Therefore there can be no objection to systematic treatment according to the methods commonly accepted in modern syphilotherapy. Measured by these standards, the treatment has unfortunately not been adequate during the early years of the infection. Since there has apparently been no tendency to symptomatic relapse, the case can now be regarded as being in the latent stage with a tendency to persistent serologic positivity. Since the patient has not received any of the arsenicals for some time, two courses, preferably of arsphenamine, are indicated, if well tolerated. A course should consist of six

injections at weekly intervals, 0.4 Gm. to the dose. After a four months rest interval, such a course should be repeated. This would give the patient a total of thirty injections of arsphenamine, including the eight doses of neoarsphenamine, a fairly good average total amount of the drug.

During the four months rest interval a course of bismuth injections (sodium potassium bismuth tartrate, 0.2 Gm. once a week or its equivalent) should be given. In order not to produce toxic manifestations, a rest period of about a month before and after the course of bismuth is desirable.

Following the second course of arsphenamine, a rest period of a month and then more injections of bismuth preparations until he has received a total of about sixty are indicated. Experience has shown that this amount of treatment in a healthy young adult is not excessive and should be given irrespective of the behavior of the blood Wassermann, but with due regard to the tolerance of the patient. If there are no clinical complications, an examination of the spinal fluid may be deferred until the full series of treatments has been completed. After that the test should by all means be done, as it is then of far greater prognostic significance than the blood Wassermann. In the event that the fluid is positive, further routine treatment is undesirable and such measures as intraspinal injections, trypanamide, or even malaria treatment must be considered. Should examination of the spinal fluid prove negative, short courses of bismuth preparations, about ten injections to the course, should be given twice a year for two more years. Barring any tendency to symptomatic relapse, it is wise to examine the patient once a year for many years to come.

OBESITY AND MENSTRUAL DISTURBANCES

To the Editor:—A woman, aged 25, suffers with intermittent attacks of amenorrhea and menorrhagia. She was married five years ago and has had no children or, as far as she knows, pregnancies. Up to the time of her marriage the menstrual function was normal, starting at 13, occurring every twenty-eight days, and lasting five days. This kept up until she was married one year. She then missed four successive periods, started flowing, and flowed for six weeks. She was curetted at the end of that time and the flow ceased. The surgeon naturally thought she was pregnant and had a miscarriage. But the uterine scrapings sent to the laboratory showed only normal scrapings, without evidence of retained secundines. This condition has kept up off and on for the past four years, during which time she has increased in weight from 136 to 210 pounds (from 61.7 to 95 Kg.). During this time she has had three separate curettages by three different surgeons to stop bleeding. All the scrapings were examined and all were normal. The last curettage was done in September, 1932, after she had flowed for two months. Previous to this, I prescribed ovarian residue tablets, and she was regular for twelve months. This was the longest period that she had been regular during the four years. The last curettage was one in Newport, R. I., where she was spending the summer. This last bleeding came on in spite of the fact that she was still taking the tablets, so I do not think that they had anything to do with helping her condition. After the curettage in September, she did not menstruate until six weeks ago, when she started, and she is still flowing. She never has any pains with the periods but passes clots, especially when on her feet for any length of time. An interesting part of this case is the fact that she gains weight and her blood pressure increases while flowing. Yesterday it was 160/90. She has a normal pressure of 124/80. She has no kidney disturbance, and her pelvis is absolutely normal. This has been checked up on by five different surgeons. I should like to know your impression of this case. I am sure she has an ovarian disturbance of some kind and would appreciate it if you would recommend a form of treatment. I have thought of giving her some injections of theelin or possibly the extract of corpus luteum. I had also considered the use of radium in this case but dismissed it from my mind on account of bringing on an artificial menopause. Do you think that removal of the uterus would be indicated? I had thought of that but, on account of her age, decided to hold off.

M.D., District of Columbia.

ANSWER.—The development of marked obesity associated with menstrual disturbances and a spastic type of hypertension is most easily explained on an endocrine basis. Determination of the basal metabolic rate is in order to evaluate the influence of the thyroid in this condition. Sugar tolerance tests might point more especially to a pituitary gland disturbance. The picture is suggestive of pituitary dysfunction with secondary ovarian changes. There have been reported instances of beneficial results in cases of functional amenorrhea and menorrhagia from the intramuscular administration of some of the female sex hormone preparations, especially those obtained by the extraction of the urine of pregnant women. "Antuitrin S" and "Follutin" are of this type. If the basal metabolic rate is below normal, thyroid extract may be administered orally in addition. Dietary restriction is also advisable. If these measures fail, one might consider roentgen therapy of the hypophysis. It would be well, in addition, to consider the possibility of the presence of a masculinizing tumor of the ovary (Meyer) before employing radium or hysterectomy—a last resort.

INTRAVENOUS INJECTIONS—LOESER'S PRODUCTS

To the Editor:—On page 7 of the enclosed pamphlet, attention is drawn to the use of hydrochloric acid by intravenous injection for various conditions, among which asthma is mentioned. My information on this subject is nil and I would appreciate your opinion concerning intravenous therapy with hydrochloric acid. I have a patient with asthma who is willing to take a chance at almost anything. Would I be justified in attempting such medication? I might state that the patient has been in the hands of one of our best asthma specialists for over a year, and in spite of extensive operations and vaccine treatment I see little if any improvement.

M.D., New York.

ANSWER.—The so-called literature on the intravenous use of hydrochloric acid in the pamphlet referred to by the correspondent is the commercial propaganda of the Loeser Laboratory, whose exploitation of unscientific intravenous medicaments has been previously noted. Reports on products of the Loeser Laboratory have appeared from time to time:

Loeser's Intravenous Solution of Calcium Chloride, *THE JOURNAL*, March 21, 1925, p. 914; Jan. 16, 1926, p. 217.

Loeser's Intravenous Solution of Hydrochloric Acid, *THE JOURNAL*, March 21, 1925, p. 914; Jan. 16, 1926, p. 217.

Loeser's Intravenous Solution of Sodium Iodide, *THE JOURNAL*, April 16, 1931, p. 1120.

Loeser's Intravenous Solution of Sodium Thiosulphate, *THE JOURNAL*, April 28, 1925, p. 1289; Jan. 16, 1926, p. 217.

In the "literature" on the intravenous use of hydrochloric acid, the testimonials for the use of the acid mention nearly all the disorders known to medicine as being benefited, without adequate evidence of any kind. The alleged relationship between causes of disease and therapeutic effects is an earmark of pure invention. Contrary to the implications in this propaganda, the intravenous use of hydrochloric acid is far from harmless; the acidity of the solution advocated is more than a million times that of the blood.

The intravenous injection of the recommended quantities of hydrochloric acid would utilize something like 16 to 24 mg. of base as bicarbonate, which exists in from 6 to 8 cc. of blood. The damaging effect on the blood of such utilization of base is well stated by Burns in his book "An Introduction to Bio-Physics," 1921, p. 417: "Erythrocytes are easily damaged by acid. This will lead to agglutination and hemolysis on the addition of acid as soon as the reserve of base has been used up." There would be other disturbances caused by such injection; for instance, those caused by invoking the intravenous reflexes, which could hardly be regarded as beneficial. From this it follows that the intravenous injection of hydrochloric acid is capable of doing more harm than good, especially with repeated injections, and therefore this procedure has no justifiable place in the therapeutic armamentarium. Physicians should unreservedly condemn the advocacy of such crude and dangerous experimentation.

PANCREATIC AND HYPOPHYSEAL DIABETES—ACROMEGALY

To the Editor:—Given an acromegalic patient with hyperglycemia and glycosuria, how is one to distinguish between pancreatic and hypophyseal diabetes? Do acromegalic and pituitary gigantic individuals excrete the anterior pituitary growth hormone? If so, how may one detect this hormone? Please omit name.

M.D., California.

ANSWER.—The hyperglycemia and the glycosuria that may accompany acromegaly are essentially similar to those which occur in ordinary diabetes mellitus. It is impossible to distinguish between "pancreatic diabetes" and "hypophyseal diabetes" on the basis of the metabolic manifestations alone. The fact that such a patient has signs and symptoms of acromegaly is therefore the primary reason for considering his diabetes of hypophyseal origin. The more recent physiologic investigations are making it increasingly evident that the anterior lobe of the pituitary gland occupies an important place in the normal carbohydrate metabolism. It is not improbable, therefore, that it may play a part in all cases of diabetes. In other words, the distinction between "hypophyseal" and "pancreatic" diabetes may be quantitative rather than qualitative. However, diabetic patients in whom there is a manifest pituitary abnormality, such as acromegaly, may differ from ordinary diabetic patients in one respect; namely, that their metabolic manifestations may be fluctuating in character. They may show spontaneous, temporary or permanent improvement or even "cure" of their diabetes, associated with evidences of change in pituitary activity.

There appear to be no references in the literature regarding the determination of the anterior pituitary growth hormone in the urine of acromegalic and pituitary gigantic individuals. Parhon, Balli and Stirbu (*Compt. rend. Soc. de biol.* 104: 227 [May 16] 1930) made daily injections of from 1 to 2 cc. of blood serum from a young acromegalic woman into two

growing guinea-pigs for a period of about three months. During that period the experimental animals increased their weight by 145.5 per cent, while similar control animals injected with normal human serum increased their weight by 135.5 per cent. This is suggestive but not especially convincing evidence of the presence of an increased amount of anterior pituitary growth hormone in the circulation of acromegalic patients.

That the hormone would be found in the urine if it were present in increased amounts in the blood is indicated by the work of Wehefritz and Gierhake (*Arch. f. Gynäk.* 149:377, 1932; abstr. *Klin. Wchschr.* 11:1106 [June 25] 1932), who obtained the growth hormone from the urine of pregnant women by adsorbing it on animal charcoal, after a preliminary purification of the urine. Young growing rats in which this charcoal was subcutaneously implanted showed a definitely increased rate of growth as compared to their controls.

HYPERESTHETIC OR VASOMOTOR RHINITIS

To the Editor:—A married woman, aged 33, for the past nine years, for two to four hours arising, has sneezed continually, with a marked watery discharge from nose. The turbinates have been removed, making the air passages clear. The tonsils have been removed. She has two children aged 6 and 3. She has tried various otolaryngologists, without relief. The menstrual periods are usually a week late but are otherwise normal. However, during her two full term pregnancies this condition leaves her. Would ovarian treatment help this? I should appreciate any information that may help this condition.

N. C. Ritsjorn, M.D., Highwood, Ill.

ANSWER.—The patient evidently has a hyperesthetic rhinitis or vasomotor rhinitis probably caused by an allergic reaction to one or more proteins. The fact that the patient sneezes shortly after arising indicates that probably house dust is the offending factor to which the patient is sensitive. House dust as a rule settles during the night when the air of a room is still, but after the patient rises and walks about, the air is stirred and the dust rises, is inhaled and causes sneezing. It cannot be said whether ovarian treatments of any sort would be of benefit in this condition. On the other hand, the patient may be sensitive to various types of proteins, and in order to learn to which ones, skin tests with different groups of proteins should be made.

SODIUM THIOSULPHATE WITH ARSPHENAMINE— SODIUM DEHYDROCHOLATE

To the Editor:—Please advise me regarding the following: Do you believe or know that it is safe, as is reported in some recent articles, to use sodium thiosulphate 4 per cent solution to dissolve neoarsphenamine in 10 cc. of distilled water and use intravenously for treating syphilis, also to prevent nausea, vomiting and liver reactions, also possibly skin reaction? Do you advise the use of sodium dehydrocholate 5 per cent solution to dissolve neoarsphenamine by adding 10 cc. of distilled water and using this for treating syphilis and the prevention as above (given intravenously)? May I also ask for the name of a company which may make the sodium dehydrocholate 5 per cent solution ready to use for intravenous injection?

M.D., Iowa.

ANSWER.—The use of sodium thiosulphate with arsphenamine has been recommended (Iwakiri: *J. Orient. Med.* 17:25 [Sept.] 1932), but experience with this mixture has not been sufficiently extensive to warrant conclusions as to clinical usefulness at this time. Iwakiri used a 5 to 10 per cent solution of sodium thiosulphate as a solvent. He apparently substituted a sodium thiosulphate solution for distilled water in equivalent quantities. The Council on Pharmacy and Chemistry has not recognized the use of sodium dehydrocholate (Decholin-N. N. R., manufactured by Riedel de Haen, Inc., New York) to diminish reactions from arsphenamine preparations. Sufficient information is not available to make any definite statement as to its usefulness in this connection.

SUNLIGHT IN GLANDULAR TUBERCULOSIS

To the Editor:—In a case of active adult glandular tuberculosis in the chest, it is desired to give increasing doses of sunlight to the maximum. At what dosage should one start, to be safe and conservative, and how rapidly may one increase it? It is intended to expose the entire body to slanting rays from an open window. What is the maximum dose? Please state whether dosage should change with the month, and time of day exposure is made; also give any other information you consider pertinent. Please omit name and address.

M.D., New York.

ANSWER.—Taking it for granted that the diagnosis of adult lymph node tuberculosis is certain, if high fever exists one would sacrifice solar exposures for complete bed rest under circumstances in which it is necessary to leave the bed to reach the sun rays.

Otherwise, solar exposures vary greatly, depending on many factors, such as location, altitude, humidity, season of year,

time of day, general condition of patient, presence of complicating pulmonary tuberculosis and whether the patient is of marked blonde or brunette type. The rate of increase of dosage will vary with skin reactions as well as constitutional ones.

In temperate zones, during the spring, adult patients not acutely progressively ill may be exposed in a room not chilly between 10 a. m. and noon and between 2 and 4 p. m. In hotter months, one should avoid the depressing heat between 11 a. m. and 2:30 to 3 p. m.

One should aim for a mild skin redness at the start and expose daily or every other day, depending on the reactions. The patient should feel as well during and after exposures as before. Reaction of depression, irritability, fatigue or undue prolonged elevation of temperature indicates stopping exposures for a while at least.

Recognizing these factors, one may start safely with five or ten minutes' exposure front and back morning and afternoon. The reaction should be studied and the exposure increased by five minutes daily up to two hours daily. The exposures should be broken up into morning and afternoon periods.

If marked pigmentation results and the patient thrives, an exposure of three hours should be the maximum.

COMMUNED FRACTURES OF PHALANGES

To the Editor:—A man, aged about 60, had a comminuted fracture of the distal phalanges, the ungual portion of the middle and ring fingers of the left hand. I put his fingers up in tongue depressor splints five weeks ago with biweekly change of splints, infra-red rays and massage as the treatment. Up to now there has been no change in the roentgenographic appearance—that is, no callus formation—and there is slight pain at the tips. The patient is quite well otherwise. What further treatment would you suggest? Please omit name.

M.D., New York.

ANSWER.—Five weeks in splints would ordinarily be considered ample time, and might even be longer than is advisable. Cases of this kind should be considered similarly to fracture into joints, and early active motion is desirable. The most important consideration at present would be active use in order to obtain flexion of the distal interphalangeal joints.

Physical therapy, including radiant heat, massage, active motions and passive movements, should speed up recovery of function. Contrast sprays will help the local circulation and nerve supply. The affected hand should be sprayed for one minute with cool water and one minute with warm water alternately. This should be done for ten minutes and the procedure carried out twice daily. The whirlpool bath and hot paraffin bath should be tried if they are available.

Occupational therapy in these cases is even more valuable than physical therapy. The patient's other hand is more beneficial than physical therapy because it is always available for massage and gentle manipulation.

POSSIBILITY OF CEREBROSPINAL SYPHILIS OR DEMENTIA PARALYTICA

To the Editor:—In 1926, while a student, I had some sinus trouble and the doctor advised a Wassermann test. It came back four plus. I had three others taken at different laboratories. They were all four plus. Immediately I started treatment, using arsphenamine, mercury and potassium bismuth tartrate alternately. The treatment lasted nearly a year. The Wassermann test remained four plus. My physician finally dismissed me, saying that I was Wassermann fast. I have taken some iodides, but the Wassermann remains four plus. My mother died with general paralysis or, as some called it, creeping paralysis. She lingered nine years. A short time before she died her Wassermann reaction was four plus. Two of her sisters died insane. Can't you see what a dreadful sword of Damocles is hanging over my head? While I am young it may not matter much but isn't there a danger of insanity later? I would take malaria or anything to get rid of this. I have remained single because of it and am in constant dread. Is the malarial treatment recognized by the American Medical Association? If so, where can I go to be treated? Please omit name, address and state.

M.D.

ANSWER.—The treatment of syphilis by malaria is indicated only in cases in which there is involvement of the central nervous system, and this in turn can be ascertained only by a complete spinal fluid examination, which includes a Wassermann test, cell count, globulin test and colloidal gold test. Malaria is of unquestionable value, especially in the parenchymatous types of central nervous system syphilis, particularly dementia paralytica, but it is a method of treatment which requires bed care and frequently hospitalization and has largely been replaced by the intravenous use of tryparsamide, which is an office procedure and, under proper control, is attendant with fewer complications and reactions. Certainly, malarial therapy should not be instituted without clear-cut indications for its use, and a competent syphilologist should be consulted before any such method of therapy is undertaken. The mere fact that insanity is present in the family does not necessarily predicate a

nervous system involvement from syphilis, and, furthermore, malarial treatment has no preventive value under such conditions. Neither will it protect against inherited psychoses. The Wassermann-fastness in this patient, while it may be an evidence of central nervous system involvement, may as well be an expression of inadequate treatment or possible cardiovascular damage, and the suggestions and further advice of a competent syphilologist are indispensable to the subsequent management of the case.

HEADACHES IN BEAUTY PARLOR OPERATOR

To the Editor.—A young woman, a beauty parlor operator, complains of severe occipital headaches, lately almost constantly present. She states that she gives many "permanent waves," and her constant presence in the room with the fumes of the "permanent wave solution" seems to make this much worse. She does not know what the solution contains, nor am I familiar with it. No sensitivity tests have been made, but we do know that the patient is properly fitted with glasses. Please omit name and town.

M.D., Iowa.

ANSWER.—The number of "permanent wave solutions" is legion. The following three formulas are indicative of their dissimilarity:

- Four per cent hydrazine hydrochloride.
- Fifteen per cent each of potassium carbonate and borax, aqueous ammonia and glycerin in low percentage, together with rose, elder, and orange water to make 100 parts.
- Borax, 3.75 parts; sodium bicarbonate, 3.5 parts; linseed oil, 0.17 part; starch, 0.4 part; water to make 100 parts.

Manifestly, more information as to the particular variety of solution in use is prerequisite to any opinion as to a possible relationship between headaches and wave solutions.

Other agents in use in some beauty parlors are equally likely causes of headaches.

TOXICITY OF HYDRAZOIC ACID

To the Editor.—In my locality there is an explosives plant where the workers are exposed to the fumes of hydrazoic acid. They complain of headaches and temporal throbbing. They feel as if an iron band were tightened round the head. It thus appears that it has a vasomotor property somewhat similar to amyl nitrite and glycyl trinitrate. Could continuous exposure to this acid cause any ill effect? Any information concerning this matter will be most welcome. (The formula of hydrazoic acid is HN_3).

A. R. Côté, M.D., Brownsburg, Quebec.

ANSWER.—It appears that this substance possesses toxic properties akin to the oxides of nitrogen and also to the nitrites. Extensive exposure may be expected to lead to pulmonary edema. Trivial exposure may occasion inflammation along the respiratory tract, particularly in its upper portion. This is the characteristic action of various oxides of nitrogen. In addition there may arise headache, vasomotor disturbances, lowered blood pressure and rapid heart, which are common manifestations of the action of nitrites. It is probable that hydrazoic acid is not highly stable or, at least, that it may be associated with other nitrogen compounds. It is a possibility that the damage that may be done to exposed workmen may not be the direct result of the hydrazoic acid but to associated compounds, particularly oxidation products. Actual cases are rare.

The following articles will furnish detailed information as to cases and experimental work:

- Kocher, Z.: A Case of Hydrazoic Acid Poisoning, *Klin. Wchnschr.* 9: 2160 (Nov. 15) 1930.
Stern, Rudolf: Ueber Toxische Wirkungen der Stickstoffwasserstoffsäure, *Klin. Wchnschr.* 6: 304 (Feb. 12) 1927.
Biehler: The Pharmacology of Hydrazoic Acid, *Knolls. Mitt. f. Aerzte* 21, 1927.
Biehler: The Pharmacology of Hydrazoic Acid, *Arch. f. exper. Path. u. Pharmacol.* 126: 1, 1927.
Kobert: Lehrbuch der Intoxikationen, 1906.

From the experimental work of Biehler, hydrazoic acid was found to be an irrespirable gas, leading to pulmonary edema, respiratory paralysis, diminished blood pressure and rapid heart.

In the articles cited, additional articles in literature are referred to.

USE OF GLYCINE IN MYASTHENIA GRAVIS

To the Editor.—What, if any, untoward actions might be anticipated from the administration of glycine in a case of myasthenia gravis? What is the pharmacologic action of this chemical substance?

K. F. Weiss, M.D., Visalia, Calif.

ANSWER.—Glycine (also known as glycolic) or aminoacetic acid, must be distinguished from the photographic developer parahydroxyphenyl amino-acetic acid, unfortunately marketed under the trade name "Glycin." The latter is a poisonous substance, partaking of the toxic properties of this class of reducing compounds.

The amino acid glycine is, of course, a normal constituent of protein, being present to the extent of about 25 per cent in

gelatin, for instance. The latter is one of the commercial sources of aminoacetic acid. No untoward effects might be expected, then, from the administration of moderate amounts of glycine. In the cases of myasthenia gravis studied by Boothby (*Proc. Staff Meet., Mayo Clin.*, Sept. 28, 1932) 15 Gm. of glycine twice daily apparently produced no ill effects.

Physiologically, glycine has been found to increase the excretion of creatine, being more effective in this respect than any other amino acid tried. Since it appeared that some deficiency in creatine metabolism (which has been found to be involved in the physiology of muscular activity) may be a factor in progressive muscular dystrophy and in myasthenia gravis, glycine was tried apparently with promising results in a few patients. It is, of course, too early to make any definite statement as to the eventual rôle of glycine in the treatment of such conditions.

Following is a bibliography of the recent literature on this subject:

- Gibson and Martin: *J. Biol. Chem.* 49: 319 (Dec.) 1921.
Brand, E., and others: *Am. J. Physiol.* 90: 296 (Oct.) 1929; *J. Biol. Chem.* 87: ix, 1930.
Brand and Harris: *J. Biol. Chem.* 92: lix, 1932.
Thomas, Milhorat and Technor: *Ztschr. f. physiol. Chem.* 205: 93, 1932.
Milhorat, Technor and Thomas: *Proc. Soc. Exper. Biol. & Med.* 29: 609 (Feb.) 1932.
Rose, W. C.: Annual Review of Biochemistry, J. M. Luck, editor, Stanford University Press 2: 195, 1933.

MAPLE SYRUP AND URTICARIA

To the Editor.—Is maple sap or freshly made maple syrup a common causative factor in urticaria? I have recently seen five cases of urticaria in children and in every instance the offending substance ingested seems definitely to have been maple sap, freshly made maple syrup and in one instance (a 3 year old girl) freshly made maple sugar. As no other maple sap season has ever been accompanied by characteristic urticaria, I am wondering whether the maple products are a cause or a coincidence. Please omit name.

M.D., Wisconsin.

ANSWER.—The sap from which maple sugar and similar products are made contains a material to which patients can become sensitive in the same sense that honey or cane sugar occasionally contains substances from the sap of plants which can sensitize and cause allergy in human beings. The offending substance is contained in exceedingly minute amounts—in fact, so minute that it is not possible to get hold of the offending substance. The condition is analogous to a case in which a young man was sensitive to an extract from corn silk, corn shuck and leaves of corn (reported by W. W. Duke in *THE JOURNAL*, Aug. 6, 1932). This patient did not react to the pollen, the grain or the fungus that grows on corn but did react to the sap. It is analogous also to honey sensitiveness reported in Duke's monograph on allergy (St. Louis, C. V. Mosby Company, 1925) in persons reacting to certain types of honey, in one instance only to wild honey.

The treatment of these cases should be primarily one of avoidance, but if the occupation of necessity brings the patient in contact with maple sap, an attempt at desensitization might seem advisable.

DEFICIENCY OF GROWTH HORMONE

To the Editor.—Would you advise me regarding the probable cause and outline treatment for the following case, and give prognosis: A girl, aged 19, has never yet menstruated. She is the third of seven children, all living and well and apparently normal except that the next older brother is below par mentally. The father and mother are living and well. The patient's personal history is negative except for menstruation. She is 57½ inches (145 cm.) tall and weighs 86½ pounds (39 Kg.). The span is 57 inches. There is no axillary or pubic hair. The mammae are very small. The nipples are small and inverted. The areola of the nipple is almost imperceptible. The patient bites off her fingernails close. Please omit name.

M.D., Kansas.

ANSWER.—The patient's short stature indicates that she probably has suffered a lack of the growth hormone of the anterior lobe of the pituitary. However, as this is not the only cause of a lack of growth, nonendocrine conditions should first be ruled out, such as diseases in the parents, childhood infections in the patient and her exposure to various toxins. If no nonendocrine cause for her lack of growth can be discovered, it can with reasonable certainty be ascribed to a lack of the growth hormone of the anterior pituitary.

The absence of pubic and axillary hair and the lack of development of the mammae might also be attributed to a lack of pituitary function, a failure of the sex hormone of the anterior lobe. Whether each of these deficiencies, that is, the deficient growth and the failure of the menstrual function and sexual development, should be ascribed to failure of a separate hormone, as is now indicated by recent experimental work, or whether all should be attributed merely to a breakdown in the anterior

lobe is in this connection of only academic interest. Her stature, the relationship of the upper to the lower measurement, and the absence, presumably since they are not mentioned, of gastrointestinal upsets, tend to rule out a primary ovarian failure as the cause of the amenorrhea.

The prognosis in such cases is fair. Treatment may include experimentally anterior lobe by mouth in doses of from 0.3 to 1 Gm. three times a day in enteric coated tablets. Preparations of the growth and sex hormone should be given in doses of one ampule each three times a week. Administration of theelin experimentally may also be of value.

PARAPHENYLENEDIAMINE DERMATITIS

To the Editor:—A man, aged 21, is engaged in the cutting of furs and making them up into wearing apparel. During the last year he has had a marked dermatitis when engaged in the work. When the patient is given treatment and remains away from furs, the condition clears up; but on reengaging in the work, he notices itching and reddening of the skin in from eighteen to thirty-six hours, associated with intense itching. I should appreciate it if you would send me any suggestions relative to what to do with this patient so that he may continue his work. It is well paid and he is extremely anxious to keep on working at the present time. Please omit name.

M.D., Iowa.

ANSWER.—This dermatitis, in all likelihood, is due to contact with paraphenylenediamine or other fur dye. A lesser possibility is that the worker is sensitized to fur itself rather than to any fur dye or other chemical employed in the tanning and preserving of furs.

It is desirable that patch tests be carried out to determine the substance to which the worker is sensitive. The technic for patch testing may be found in an article entitled "The Contact or Patch Test in Dermatology: Its Uses, Advantages and Limitations," by M. B. Sulzberger and Fred Wise (*Arch. Dermat. & Syph.* 23:519 [March] 1931).

The prospects of continuation in this trade without recurrences of the dermatitis are not good. Desensitization is not promising. The general upbuilding of health will provide some expectation of betterment; protective garments will bring about a small amount of additional security; after years of exposure, natural immunity may develop, but this is not assured. If patch tests indicate a well established sensitivity, and if the dermatitis is severe, probably it would be to the advantage of this youthful workman to change occupation at an early time.

P. J. Hanzlik (*J. Indust. Hyg.* 4:386 [Jan.], 448 [Feb.] 1923) and R. Williamson (*ibid.* 4:507 [April] 1923) have presented an extensive discussion of paraphenylenediamine toxicity.

A. L. A.

To the Editor:—Enclosed please find pamphlet of A. L. A., supposedly a superior local anesthetic. Please give your opinion of its value as a local anesthetic.

M. J. SCHWARTZ, M.D., Chicago.

ANSWER.—"A. L. A." is the unscientific proprietary name for a local anesthetic which is being exploited to the medical profession by Sutliff & Case Company, Inc., Peoria, Ill. According to the advertising literature the product has the following formula:

| | per cent |
|-------------------------------------|----------|
| P-Aminobenzoic Acid Ethylester..... | 3 |
| Phenethylol | 5 |
| Ether | 10 |
| Olive Oil | 82 |

P-Aminobenzoic Acid Ethylester is the cumbersome name for ethyl aminobenzoate-U. S. P. (Anaesthesine). Phenethylol is a name for a product which is better known under the designation benzyl alcohol. If the firm had wanted to be absolutely candid about the composition of its product it would not have been necessary to hide the composition under the noninforming initials A. L. A.; the statement of composition could have been given in the chemical terms easily understood by the medical profession rather than those terms which, in effect, hide the identity of the product. Naturally, the product does not stand accepted by the Council on Pharmacy and Chemistry.

MOST RAPID HEART BEAT

To the Editor:—In the Heart Rate, by Boas and Goldschmidt, the statement is made that "the highest rate that we have seen reported is 246, after thirty minutes of exhausting exercise which resulted in collapse." Will you kindly advise whether this is the highest rate ever recorded, and if not, what is the highest on record?

M. C. SILIN, Boston.

ANSWER.—A survey of recent literature indicates a report of 300 beats per minute maintained without intermission for several days in a case reported by Russell and Ellison (*Lancet* 2:546 [Sept. 10] 1927). In this case the number of beats was

recorded by the electrocardiograph and the polygraph. There are numerous instances on record of from 270 to 290 beats per minute, checked by the electrocardiogram. Previous to the development of these devices it was necessary to depend on auscultation, which, obviously, could not yield so accurate a count of the rate as is accomplished by the mechanical methods mentioned.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVighne, Juneau.
AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written*. Boston, Chicago, Cleveland, New York, Philadelphia, St. Louis and San Francisco, Oct. 28. *Oral*. New York, Dec. 15-16. Application must be filed before Sept. 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The examinations will be held in various cities of the United States and Canada, Dec. 9. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.
AMERICAN BOARD OF OTOLARYNGOLOGY: Boston, Sept. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.
NATIONAL BOARD OF MEDICAL EXAMINERS: *Paris I and II*. The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.
NEW HAMPSHIRE: Concord, Sept. 14-15. Sec., Dr. Charles Duncan, State House, Concord.
NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Chiel, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.
OKLAHOMA: Oklahoma City, Sept. 12-13. Sec., Dr. J. M. Byrum, Mammoth Bldg., Shawnee.
PUERTO RICO: San Juan, Sept. 5. Sec., Dr. O. Costa Mandry, Box 536, San Juan.
WISCONSIN: *Basic Science*. Madison, Sept. 23. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Arizona January Report

Dr. J. H. Patterson, secretary, Arizona Board of Medical Examiners, reports the written examination held in Phoenix, Jan. 10-11, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Four candidates were examined, 3 of whom passed and 1 failed. One physician was licensed by reciprocity. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|--------|------------|----------|
| Harvard University Medical School..... | (1930) | | 86.2 |
| Jefferson Medical College of Philadelphia..... | (1930) | | 79.3 |
| University of Tennessee College of Medicine..... | (1930) | | 82 |

| College | FAILED | Year Grad. |
|--|--------|------------|
| University of Kansas School of Medicine..... | (1931) | |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| Chicago College of Medicine and Surgery..... | (1913) | | Illinois |

California Reciprocity and Endorsement Report

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports 21 physicians licensed by reciprocity with other states and 4 physicians licensed by endorsement from April 19 to June 22, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|--------------------------------|------------|------------------|
| University of Colorado School of Medicine..... | (1928) | | Colorado |
| Atlanta School of Medicine..... | (1913) | | Mississippi |
| Northwestern University Medical School..... | (1927) | | Minnesota |
| Rush Medical College..... | (1919) | | Utah |
| Indiana University School of Medicine..... | (1913) | | Indiana |
| University of Kansas School of Medicine..... | (1929) | | Kansas |
| Harvard University Medical School..... | (1930) | | Mass. |
| University of Michigan Medical School..... | (1928) | | Michigan |
| University of Minnesota Medical School..... | (1928) | | Minnesota |
| Creighton University School of Medicine..... | (1929) | | S. Dakota |
| University of Nebraska College of Medicine..... | (1923) | | Nebraska |
| University of Cincinnati College of Medicine..... | (1931) | | Ohio |
| Western Reserve University School of Medicine..... | (1931) | | Ohio |
| University of Oregon Medical School..... | (1918), (1921), (1927), (1930) | | Oregon |
| Jefferson Medical College of Philadelphia..... | (1920) | | W. Virginia |
| Temple University School of Medicine..... | (1927) | | Michigan |
| University of the South Medical Department, Tennessee..... | (1898) | | Washington |
| University of Texas School of Medicine..... | (1931) | | Texas |

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|---|-------------------------|------------|----------------|
| College of Medical Evangelists..... | (1932, 2) | | U. S. Navy |
| Jefferson Medical College of Philadelphia..... | (1931) | | U. S. Navy |
| Kongelige Frederiks Universitets Medicinske Fakultet, Norway..... | (1922) | | N. B. M. Ex. |

Connecticut March Report

Dr. Thomas P. Murdock, secretary, Connecticut Medical Examining Board, reports the written examination held in Hartford, March 14-15, 1933. The examination covered 7 subjects and included 70 questions. Thirty-one candidates were examined, 24 of whom passed and 7 failed. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|---|---------------------------------|--------------|----------|
| Yale University School of Medicine..... | (1929) | 81. | |
| (1930) 78.6, (1932) 76.6 | | | |
| Georgetown University School of Medicine..... | (1931) | 78.6, | |
| (1932) 75.7, 75.8,* 76.2, 76.8, 80.1* | | | |
| Howard University College of Medicine..... | (1930) | 75.8* | |
| Loyola University School of Medicine..... | (1929) | 75 | |
| Johns Hopkins University School of Medicine..... | (1930) | 82.4 | |
| University of Maryland School of Medicine and College of Physicians and Surgeons..... | (1931) | 77.2 | |
| Boston University School of Medicine..... | (1932) | 77* | |
| Tufts College Medical School..... | (1931) 82.7, (1932) 80.1, 80.1, | 85.2* | |
| University of Michigan Medical School..... | (1931) | 81.7 | |
| Jefferson Medical College of Philadelphia..... | (1932) 76.2,* | 81.4 | |
| University of Tennessee College of Medicine..... | (1928) | 78.9 | |
| McGill University Faculty of Medicine..... | (1932) | 85.3 | |
| Osteopath† | | | |
| College | FAILED | Year Grad. | Per Cent |
| Georgetown University School of Medicine (1931) 70.9, (1932) 70.4, | | 72.7 | |
| St. Louis University School of Medicine..... | (1931) | 72.9 | |
| Jefferson Medical College of Philadelphia..... | (1932) | 71.2 | |
| Osteopaths | | 64.5,‡ 67.6‡ | |

Twenty physicians were licensed by endorsement from January 7 to May 22. The following colleges were represented:

| College | LICENSED BY ENDORSEMENT | Year Grad. | Endorsement of |
|--|-------------------------|--------------|----------------|
| Yale University School of Medicine..... | (1929, 2), (1931, 2) | N. B. M. Ex. | |
| " " School of Medicine..... | (1926) | Dist. Colum. | |
| " " School of Medicine..... | (1914) | Maryland, | |
| " " School of Medicine..... | (1929), (1930), (1931) | N. B. M. Ex. | |
| " " School of Medicine..... | (1929) | N. B. M. Ex. | |
| " " School of Medicine..... | (1929) | N. B. M. Ex. | |
| " " School of Medicine..... | (1929) | N. B. M. Ex. | |
| Cornell University Medical College..... | (1929) | New York | |
| University of Pennsylvania School of Medicine..... | (1919) | Ohio | |
| Vanderbilt University School of Medicine..... | (1929) | Tennessee | |
| University of Texas School of Medicine..... | (1927) | New York | |
| Queen's University Faculty of Medicine..... | (1929) | New York | |
| Ludwig-Maximilians-Universität Medizinische Fakultät, Germany..... | (1924) | Vermont | |

*License has not been issued.

†Licensed to practice medicine and surgery.

‡Examined in medicine and surgery.

Arizona Reciprocity Report

Dr. J. H. Patterson, secretary, Arizona Board of Medical Examiners, reports 3 physicians licensed by reciprocity with other states, April 6, 1933. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| Loyola University School of Medicine..... | (1917) | Illinois | |
| University of Oregon Medical School..... | (1926) | Oregon | |
| Jefferson Medical College of Philadelphia..... | (1910) | Penna. | |

Arkansas May Report

Dr. Sam J. Allbright, secretary, State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, May 9-10, 1933. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Forty-two candidates were examined, 41 of whom passed and one failed. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent |
|--|--------|------------|----------|
| University of Arkansas School of Medicine..... | (1933) | 78. | |
| 78.9, 81.2, 81.6, 81.8, 81.9, 82.3, 82.5, 82.6, 82.7, 82.8, 83.2, 83.2, 83.3, 83.3, 83.3, 83.7, 83.8, 83.8, 83.9, 84.3, 84.5, 84.7, 84.8, 84.8, 84.9, 85.3, 85.5, 85.5, 85.9, 86, 86.5, 86.6, 86.7, 86.9, 86.9, 87.2, 89.5, 90.2 | | | |
| University of Tennessee College of Medicine..... | (1933) | 84.9 | |
| College | FAILED | Year Grad. | Per Cent |
| University of Arkansas School of Medicine..... | (1907) | 64 | |

Three physicians were licensed by reciprocity with other states from January 25 to April 18. The following colleges were represented:

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|--|-------------------------|------------|------------------|
| University of Louisville Medical Department..... | (1913) | Indiana | |
| Columbia Univ. College of Physicians and Surgeons..... | (1927) | New York | |
| University of Tennessee College of Medicine..... | (1931) | Tennessee | |

Book Notices

Lymphatics, Lymph and Tissue Fluid. By Cecil K. Drinker, B.S., M.D., Professor of Physiology, Harvard School of Public Health, and Madeleine E. Field, A.B., Ph.D., Instructor in Physiology, Harvard School of Public Health. Cloth. Price, \$3. Pp. 254, with 14 illustrations. Baltimore: Williams & Wilkins Company, 1933.

Much information on lymph and tissue fluid appears as isolated articles in journals of physiology, immunology, anatomy and pathology. The authors of this monograph have attempted to correlate such data and present their views on the subject. The first chapter deals with the embryology and anatomy of the lymphatic system. Sabin's conception of the origin of lymphatics is held by the authors as opposed to the view of Huntington, McClure, Kampmier and others who believe that the earliest lymphatic trunks are established by progressive coalescence of originally discontinuous mesenchymal spaces. The latter view deserves more than passing notice in spite of the authors' preference. This chapter on the whole is, however, a well summarized introduction. The chapters on physiology of lymph and tissue fluid are excellently written and present a vast amount of data in readily available form. The chapters on the entrance of foreign particles and colloidal solutions into the lymphatics and on the permeability of the blood capillaries are especially well organized. Chapters on the flow of lymph, composition of lymph and a consideration of tissue fluid complete the expository phase of the monograph. The authors then point out the practical considerations of the subject. While they are distinctly limited by a lack of complete data, this chapter is well done and should serve a useful purpose for those interested in a practical application of facts. The authors are to be commended for their attempt to present a working conception of the lymphatics. The monograph will be of special interest to the physiologist, anatomist and pathologist, but the internist also should find in it stimulation as well as a number of workable facts.

Vorbeugung und Bekämpfung der Operationsgefahren. Von Professor Dr. M. Kappis. Paper. Price, 17 marks. Pp. 382, with 12 illustrations. Leipzig: Georg Thieme, 1933.

This monograph, by Kappis of Hanover, deals with precautions to be taken and methods of combating operative dangers. Operations have become standardized and there is little to be expected in the way of improvement in technic. At present the surgeon's chief efforts are directed toward determining in advance the patient's ability to withstand operation, to decrease the dangers of operation by special and general preoperative measures, and to increase the chances of cure by careful post-operative management. It is with these subjects that this volume is concerned. Special consideration is given to the newer concepts of normal and pathologic physiology and to the latest developments in the other biologic and natural sciences. Whenever these can be made use of, they are applied to the patient about to be operated on, during the course of the operation, and postoperatively. The chief value of the volume is in the application of this new knowledge in surgery. The author points out that a study of the causes of death following operation in his clinic shows that 55 per cent were the result of the condition for the relief of which the operation was undertaken, and that, obviously, practitioners are limited in their ability to help extremely sick patients, such as those suffering from cancer, suppurative peritonitis, or severe injury. On the other hand, many of the other causes of death are more or less preventable. These include pulmonary complications (pneumonia, lung abscess, bronchitis), which constituted 7.5 per cent; thrombosis and embolism, which constituted 1.6 per cent in 1923, over 8.6 per cent in 1930, and 6.5 per cent in 1931; the general condition of the patient, 14 per cent. patients in whom operation was hazarded as the last and only hope; operative infection, often unavoidable, as in operations on the stomach and intestine for cancer or ileus; mistakes in diagnosis, improperly selected time of operation, or improperly planned operative technic, and special postoperative complications, as cerebral hemorrhage and the like, which accounted for 1 per cent. It is possible to decrease many of these by attention to the nervous system, the organs of circulation, the metabolism and the important viscera, including the endocrine glands. The aim of the author has been to collect this infor-

mation in one volume, so that the experienced as well as the inexperienced surgeon can evaluate, as well as present knowledge allows, the ability of a particular patient to withstand operation, and his limits. The material is divided into three parts. Part I, of 150 pages, considers preoperative precautions and preoperative preparation. Each of the organs and systems is considered separately with discussions on the methods of determining whether they are functioning normally or not, and the means of correcting them, so far as is possible, before operation. Part II, of 50 pages, discusses the dangers that occur during the time of operation and immediately following, with the appropriate treatment. Part III discusses postoperative care. This comprises 180 pages, or almost half of the volume. It is divided into two parts, general and special, the former comprising two thirds of this portion of the work, the latter about one third. Under the latter the special post-operative care is grouped under operations on the various systems and organs. The directions are explicit as to the care following these special operations and even include elaborate diet lists, planned by days. The work is strictly down to date, is based on modern thought, and source references to the literature are given at the bottom of the pages. It is a valuable book for all surgeons able to read German and for all others who are responsible for the care of patients requiring operation.

Laboratory Manual: Methods of Analysis of Milk and Its Products. Compiled by International Association of Milk Dealers. Fabrhold. Price, \$5. Pp. 462, with 140 illustrations. Chicago: The Association, 1933.

The Laboratory Committees on Research and Methods of the International Association of Milk Dealers have collected in this comprehensive laboratory handbook the practical data of the literature of their industry, including methods of bacteriologic and chemical examination of dairy products and products used in the dairy industry, such as fruits, flavors and gelatin. The testing of washing solutions, brines, sterilizing solutions, and sterility of milk bottles and cans are included. Practically all laboratory tests used in large or small milk or dairy products plants are presented in detail. The manual makes scattered data readily available and will tend to standardize laboratory procedures which are prime essentials to a still greater perfection of methods, greater efficiency in the technical control of the industry, and improvement in the quality and health safety of the tremendous output of dairy products. Sections are devoted to the organization of a dairy laboratory, bacteriologic control methods, chemical and physical control methods for dairy products, bacteriologic, chemical and physical tests for nondairy products, and the preparation of bacteriologic mediums, standard solutions and indicators. The appendix is notably complete in conversion tables, engineering data and tables, legal standards, authoritative analyses and properties of dairy and related products, and other practical plant information. The arrangement and classification of the material are excellent.

La transfusion du sang de cadavre à l'homme. Par Serge Judine, professeur, chirurgien en chef du service de chirurgie à l'Institut de Traumatologie et de chirurgie d'urgence. Préface du professeur A. Gosset. Paper. Price, 24 francs. Pp. 144. Paris: Masson & Cie, 1933.

In this monograph, Serge Judine reports his interesting experiences and experiments in performing the first hundred transfusions in which cadavers were used as donors. The author is the chief of the Emergency Hospital in Moscow, a city of more than three million inhabitants, which cares for street accidents, industrial accidents and emergencies of all sorts. It has an operative activity unequaled in the whole world. In such a center, emergency transfusions are often necessary. Not being able always to have desirable donors at his disposal, Judine sought a solution of this difficult problem. He knew the experimental work of Schamoff, who bled dogs as completely as possible, washed physiologic solution of sodium chloride through their veins, and then revived them by transfusing into them blood from cadaver dogs killed several hours previously. Judine decided to apply this method to human patients.

After experimenting on dogs himself and determining the innocuousness and efficiency of these transfusions, particularly if the blood is removed within less than eight hours post mortem, the first opportunity to try it on a man presented

itself. The first case in which Judine used the blood of a cadaver was that of a young man who attempted suicide by cutting the veins of the cubital fossa with a razor. The patient was in an agonal condition, extremely pale, pulseless, hardly breathing, and with dilated pupils. A transfusion was indicated, but it was the middle of the night and there was no donor obtainable. Judine had in the institute the cadaver of an arteriosclerotic patient, aged 60, who had died six hours previously and whose blood was of the same group. He decided to act. He opened the abdomen of the deceased, and from the vena cava withdrew 450 cc. of blood, which he injected immediately into the patient. A veritable resurrection occurred. No toxic reaction followed, and four days later the patient left the hospital. Since then he has used this method successfully in more than one hundred cases.

He used the blood from intact cadavers who died of suicide, heart disease or skull fracture. Blood is drawn under aseptic precautions through a cannula in the jugular vein, with the cadaver in an exaggerated Trendelenburg position. From 1 to 1.5 liters may be obtained in a minute or two. The blood is collected in sterile flasks, preserved with sodium citrate, 2 Gm. to 500 cc. of blood, stoppered with cotton, and placed in the icebox, where it is kept at a temperature of from 1 to 2 C. and where it may remain in good condition until used, or as long as twenty-eight days. It is best, however, to use it during the first eight days. The blood group is determined and a Wassermann test is performed in each case, either before or after death. Cadaver blood and refrigerated blood can be grouped without any abnormality. His indications for transfusion, the technic and the amount of cadaver blood used are the same as when living donors are used. The results have been satisfactory, at times striking, and are not associated with any greater percentage of reactions, particularly if the blood used has been taken from a cadaver dead less than twelve hours. These researches of Judine must be recognized as extraordinary. The idea of transfusing cadaver blood, however, cannot fail to offend and will probably not be accepted universally for a long time.

Group Payment for Medical Care: The Stanocola Employees' Medical and Hospital Association, Baton Rouge, Louisiana. Financial and Administrative Features. By C. Rufus Rorem, Ph.D. Quality of the Professional Services. By John H. Musser, M.D., Paper. Pp. 40. Chicago: Julius Rosenwald Fund, 1932.

Since 1924 a group of employees of the Standard Oil Company of Louisiana have operated the Stanocola Employees' Medical and Hospital Association, an organization maintained to furnish medical and hospital services to themselves and their dependents. The report of this project is a brief in favor of the insurance principle by the distribution of the burden of cost over a considerable number of persons. The beneficiaries of the plan pay \$36 annually, an amount which, it is stated, represents about 2.5 per cent of family income. For the year 1931 the total costs to the association for medical services were \$92,245.80. Of this amount, \$41,175.00 was paid for the services of seven physicians. It is claimed that these physicians received more than they would have been able to collect in independent practice among the same group. A value of the amount of service rendered by the medical staff may be estimated by multiplying the volume of services by the average fees for each type of service. It is found that this amount reaches approximately \$200,000. This seems to be ample reason for the statement that the association has been an economic success in the savings to its members. It ought to be added, however, that the medical staff has contributed services equivalent to about \$160,000 to the success of the project.

Although it is implied that a free choice of physician is available, it is obvious that this free choice is limited to the seven physicians on the staff. The authors refer to the work of the physicians employed by the Standard Oil Company as group practice. It is possible that the organization of the physicians resembles independent group practice; however, it would appear that all these physicians who receive full time salaries from the Standard Oil Company are contract group physicians in the ordinary sense of the term.

It is claimed that the members of the Stanocola Employees' Medical and Hospital Association appear to receive a type of medical service that is remarkable, considering the financial outlay. It is admitted that definite limitations are placed on the

character of the medical service and that some of the physicians have too large a group to care for. It is claimed that the physicians have certain advantages in this organization, such as freedom from financial worries, the daily contact with other physicians who maintain a constant contact with medical advances, no fear of losing a patient to another physician and certain time off each week in addition to a vacation period without loss of income. Nothing is said concerning the attitude of the county or state medical societies relative to this or similar projects. The report leaves the reader with the impression that the plan is considered a model one which should be adopted elsewhere.

Les tachycardies paroxystiques ventriculaires. Par Roger Froment. Préface du Docteur L. Gallavardin. Paper. Price, 50 francs. Pp. 541, with 47 illustrations. Paris: Masson & Cie, 1932.

On approaching this book, one wonders how 500 pages can be used in a discussion of ventricular tachycardia. One discovers that the author does it exceedingly well and without unnecessary circumlocution. Ninety-nine cases are reported which illustrate all possible forms of this disorder and one suspects that these cases represent all that are to be found in the literature to date. The book is opened by a general consideration of the subject. Here are considered the importance of this disorder, some historical facts in connection with it, and the diagnostic criteria, both clinical and electrocardiographic. The author then divides the cases into two main groups, the grave type (*les tachycardies ventriculaires pré-fibrillatoires*), and a benign type. It is with the former type that a large part of the book is concerned. A consideration of the causes of this disorder includes diseases of the coronary artery, chloroform intoxication, certain drugs, diphtheria toxin, pulmonary embolism, the rôle played by the extracardiac nerves, and electrical irritation of the myocardium. Among the drugs that are given a place in the discussion are digitalis and its allies, whose danger in this condition should be well known. Quinine is mentioned as a dangerous drug to use in cases in which the heart appears damaged. This fact does not seem so well known and this portion of the work is worthy of serious study. It seems probable that the author somewhat exaggerates the dangers of morphine in this connection. A clinical consideration of the subject follows, which includes electrocardiographic studies of the various types of the disorder and is concluded by a discussion of treatment. A bibliography of 426 references introduces a somewhat novel feature: the references are classified in accordance with the author's idea of their importance. Some references are labeled "fundamental," others "important," still others "of average importance," while the remainder carry no special mark. The book is excellently done and is clearly the result of long and painstaking study of the subject. To all who are interested in this disorder the book is highly recommended.

Slums, Large-Scale Housing and Decentralization. Edited by John M. Gries and James Ford. Reports of the Committees on Blighted Areas and Slums, Abram Garfield, Chairman. Large-Scale Operations, Alfred K. Stern, Chairman. Business and Housing, Harry A. Wheeler, Chairman. Industrial Decentralization and Housing, Stuart W. Cramer, Chairman. Cloth. Price, \$1.15. Pp. 245, with illustrations. Washington, D. C.: President's Conference on Home Building and Home Ownership, 1932.

Reports of four committees of President Hoover's Conference on Home Building and Home Ownership are presented in this volume. The Committee on Blighted Areas and Slums discusses the economic, social and health aspects of slums, and their prevalence in America in smaller cities as well as in metropolitan centers. This report is followed by appendixes representing individual opinions supplementing the committee's report. These seem to be more in the nature of amplification and by way of advocating individual recommendations than minority reports. The Committee on Large-Scale Operations for the eradication of slums makes a report in which is discussed the importance of capital in the provision of housing, and the unsound condition of the present social structure, in which adequate housing is, at least in urban centers, a luxury product and is unadapted to improvement. Large-scale operations for slum improvement are held to be essential, and a few are cited, with emphasis on the fact that there are few to cite. It is pointed out that philanthropy has given impetus to many of these projects. It is also pointed out that large-scale operations need not imply the apartment house type of residence but

may be expressed in groups of individual houses. There are six appendixes to this report. The third committee deals with housing and business. The sum of its deliberations is that housing must be provided on a business and not a philanthropic basis, and that it is time business got at the problem before government swallows the opportunity. This is not the only report which intimates, sometimes bluntly, that, unless slums are cleared out by private initiative, government will do it, a threat which history should lead one to believe is not idle. This chapter has two appendixes. The last report is one devoted to industrial decentralization and housing, distribution of wage earners, and location tendencies of industries, setting forth the advantages of small industrial-agricultural communities as compared with the great population centers that now exist. The report is an interesting and valuable collection of facts, useful especially to those who are concerned with the slum and its influence on community health, morals, progress and economics.

The Legal and Ethical Aspects of Medical Quackery. By Leonard La Marchant Minty, Ph.D., B.Sc., B.Com., South Eastern Circuit and Central Criminal Court, Barrister-at-Law. Cloth. Price, 7/6. Pp. 262. London: William Heinemann, Ltd., 1932.

This is an interesting and informative little book, in which the author, an English barrister, discusses the irregular practice of medicine, herbalists, bonesetters, chiropractors, osteopaths, homeopaths, abortionists, peripatetic opticians, "patent medicine" quackery and religious quackery. Much of the book is written from the standpoint of English law and custom, but the conditions described do not seem to differ widely from analogous conditions in the United States. Although the author's discussion of affairs in this country is in some respects out of date and in others erroneous, American readers are hardly likely to be misled. To any one who is interested in the broader aspects of quackery as related to the art of healing, the book is worth while.

The Effect of Sunlight and Other Factors on the Strength and Color of Cotton Fabrics. By Mary Anna Grimes. Division of Rural Home Research, Texas Agricultural Experiment Station, Bulletin No. 474. Paper. Pp. 56, with 27 illustrations. College Station, Texas: Agricultural and Mechanical College of Texas, 1933.

This pamphlet contains a review of the literature and also a report on the original work carried out at the Texas Agricultural Experiment Station on twenty-two cotton fabrics, which were exposed to sunlight from 25 to 375 hours in 25-hour periods. It was found that, in general, an increase of time of exposure resulted in a greater color fading and also in a reduced strength. The loss in breaking strength was not to the same extent in all fabrics. The average loss in the breaking strength of the cotton fabrics after 375 hours of exposure ranged from approximately 8 to 47 per cent in the warp and from 18 to 58 per cent in the filling. Spectrophotometric analysis of the color of each fabric before and after exposure to sunlight revealed that all fabrics, whether white or dyed, underwent some change in color. Unbleached fabrics became lighter, and bleached undyed fabrics became grayer and more yellow.

Die Blutgruppen und ihre Anwendungsgebiete. Von Dr. Fritz Schiff, Abteilungsdirektor am Städtischen Krankenhaus im Friedrichshain, Berlin. Mit einem Beitrag: Indikationen und Technik der Bluttransfusion. Von Professor Dr. Ernst Unger, Dir. Arzt am Rudolf Virchow-Krankenhaus, Berlin. Paper. Price, 18.60 marks. Pp. 267, with 96 illustrations. Berlin: Julius Springer, 1933.

Here is one more book on the blood groups and their applications in transfusion and otherwise. It is divided into the following chapters: the human blood groups; blood transfusion, with a section on indication and technic by Ernst Unger; blood groups in criminology; heredity in blood differences; the examination of biologic descent (parentage); the importance of the blood groups in certain problems of heredity; blood groups and anthropology; blood grouping in the animal kingdom. The book does not deal with the details of the technic of practical blood grouping; for technical instructions the reader is referred to the author's *Die Technik der Blutgruppenuntersuchung*, the second edition of which was published in 1929. Fortunately these two books are published in the same handy format by the same publisher. In the book now under review the section formed by pages 72 to 79, on the methods used in certain large cities to secure adequate supplies of healthy

donors for therapeutic transfusion, will be of especial interest to those who are directly concerned with this important problem. The book is comprehensive, reliable, handy. It is provided with an extensive bibliography arranged alphabetically according to the names of authors. With its sister volume on technic it constitutes a third standard recent work on blood grouping. The other two are Lattes' *Individuality of the Blood*, Oxford University Press, 1932, and *Handbuch der Blutgruppenkunde*, edited by Paul Steffan, Munich, J. F. Lehmann, 1932.

Accounting and Business Procedure for Hospitals. Prepared by New York Conference on Hospital Accounting. Herbert R. Sands, Consulting Accountant. Cloth. Pp. 185. New York: United Hospital Fund of New York, 1933.

This is not a textbook on bookkeeping—it is not a treatise on the theory and practice of accounting, as such. It is a presentation of the principles on which hospital financing, accounting and management are based. Among the subjects of valuable chapters are the proper handling of endowment and other funds, the determination of rates, the purchasing, storing and issuing of supplies, and the handling of payrolls and budgets. Attention is given to statistical reports in addition to the financial statements, and brief suggestions are made regarding medical statistics, including analyses of case histories. The book does not present a system, or a set of forms, that can be taken over by hospitals, but it should be a valuable help to any one who is concerned with the administration of a hospital. Incidentally, it suggests an approach to a greater uniformity in financial and medical statistics.

Wissenschaftliche Forschungsberichte, naturwissenschaftliche Reihe. Herausgegeben von Dr. Raphael Ed. Liesegang. Band XXX: Fortschritte der Serologie. Von Hans Schmidt, Dr. med. a. o. Prof. für Hygiene. Institut für exper. Therapie "Emil v. Behring," Marburg a. L. Paper. Price, 12 marks. Pp. 191, with 20 illustrations. Dresden & Leipzig: Theodor Steinkopf, 1933.

This book reviews the progress of serology during the last few years and up to July, 1932. The word serology is used in a strictly limited sense and includes only such immune phenomena as may be studied in the test tube. In other words, the book does not deal with the biologic problems of immunity, infectious and otherwise, or of anaphylaxis. An enumeration of the main topics will indicate better the exact scope of the book: antigen and haptens, agglutination, hemagglutination, specific precipitation, complement, hemolysis, complement fixation and deviation, the Wassermann reaction, inhibition zones in serologic reactions, phagocytosis, bactericidal and bacteriolytic antibodies, toxins and antitoxins, the lipoids in serologic reactions, and the formation of antibody. The book gives an authoritative, more or less critical, instructive review of the progress of investigation of the problems just indicated.

Pediatric Nursing: A Text-Book for Nurses. By Abraham Levinson, B.S., M.D., Associate in Pediatrics, Northwestern University Medical School. Second edition. Cloth. Price, \$2.75. Pp. 282, with 29 illustrations. Philadelphia: Lea & Febiger, 1933.

The chief duty of the nurse is to carry out the treatment prescribed by the physician and to render aid in prophylaxis so far as she is able. The nurse who understands the essentials of the disease from which her patient is suffering is likely to be more efficient in caring for that patient than one who understands only nursing technic. However, the knowledge of nursing technic is of first importance for the nurse. In this book, special emphasis is placed on these subjects. Enough information on the anatomy and physiology of the infant is included to give the nurse a background on which to base intelligent care of the baby. Unlike many other books written for the nurse, this one is dedicated to her. In other words, it is prepared in language that she can understand. It discusses all problems from her standpoint, and not from that of the physician. As a textbook for nurses interested in pediatrics, this book should find its place.

A Surgeon's Pocket Book. By H. S. Souttar, D.M., M.Ch., F.R.C.S., Surgeon, London Hospital. Cloth. Price, 7/6. Pp. 285. London: William Heinemann, 1933.

This is a small, pocket sized compend of surgery, actually an abstract of the author's textbook "The Art of Surgery." It is written in skeleton outline form and in itself is insufficient. As a companion to the regular textbook it may prove helpful to the student for study and review.

Medicolegal

Sponge Left in Abdomen: Physician, Not Nurse, Responsible.—The appellant left a sponge in his patient's abdomen after an operation. She sued him. The trial court gave judgment in the patient's favor, and the physician appealed to the Supreme Court of Indiana. He admitted that he put the sponge into his patient's abdomen and that he relied, as was the custom, on the report of a nurse that all sponges used in the operation had been accounted for. The nurses who assisted were provided by the hospital. Their mistakes, he contended, could not be imputed to him.

A physician who is performing an operation in the abdomen, said the Supreme Court, cannot assign details of it to persons who are to assist him, unknown to the patient, and escape liability by relying on them to perform duties that he himself is obliged to perform. Although the evidence supported the physician's contention that good surgical practice left it to nurses to account for instruments and sponges used, that evidence, the court held, did not exonerate him as a matter of law; a jury might consider it in determining whether he was or was not negligent, but the determination rested exclusively with the jury.

The physician-appellant objected because his patient, the appellee, introduced no expert testimony to prove negligence. The introduction of expert testimony, said the court, was a matter of defense. The rule of *res ipsa loquitur* applied and it put on the appellant the burden of proving that he was not negligent. Of the many expert witnesses who testified for the appellant, not one testified that it was in any way beneficial or useful to leave a sponge in a patient's abdomen. The sponge in this case had a tape attached, to which, according to the expert testimony, forceps were to be attached. The tape and forceps should have hung outside the body as long as the sponge was in the abdomen, for the very purpose of preventing a loss of the sponge after it had served its purpose. The appellant, said the court, offered no testimony to show that the requirements of good surgical practice had been met and that forceps attached to the sponge had been left hanging outside the patient's body. If this had been done, it seemed to the court, the incision would not have been closed without finding the tape protruding through the opening.

The decision of the issue in a case such as this, said the court, cannot rest entirely on expert testimony, as the appellant would have it do. Such a practice would invade the province of a jury and take from it its duty of deciding whether a given set of facts does or does not constitute negligence. The propriety of placing sponges in the abdomen may be a matter to be proved by expert testimony, but the propriety of removing them after they have been so placed is not. To leave a sponge in the abdomen knowingly might give rise to a question on which expert testimony would be competent, but no such question is presented here; the appellant did not knowingly leave the sponge in his patient's abdomen. The inference that this sponge should have been removed before the completion of the operation is supported by abundant evidence.

The judgment of the trial court against the physician-appellant was affirmed.—*Funk v. Bonham (Ind.)*, 183 N. E. 312.

When Is a Child Born Alive.—Stuertz died without leaving a will. Sept. 19, 1929. On May 23, 1930, his widow, after a prolonged and difficult labor, gave birth to a child. At birth the child showed signs of asphyxiation. The child made no effort to breathe nor any other movement, but the umbilical cord pulsed. The cord was ligated, injections of lobelia were given to stimulate breathing, and artificial respiration and other usual methods to revive newly born infants were employed, but without success. After a half hour or so these efforts were discontinued and the child was regarded as dead. The birth certificate reported the child as stillborn and stated the cause of death as toxemia.

On the hypothesis that the child was born dead, the parents of the deceased instituted a suit to enforce their supposed rights of inheritance in the estate. Pursuant to the directions of the trial court, the jury found that the child was born alive, and

the widow and child were therefore the heirs to the estate. The parents of the deceased then appealed to the Supreme Court of Nebraska.

In *Brock v. Kellock*, 30 L. J. (N. S.) 498, it was held that proof of breathing was not necessary to prove live birth, the pulsation of the umbilical cord being sufficient evidence. In *Goff v. Anderson*, 91 Ky. 303, 15 S. W. 866, 11 L. R. A. 825, it was held that a child was born alive when it made an effort to breathe after independent circulation and delivery, "independent circulation" meaning circulation maintained by the child independent of the mother. In *Doe ex dem. Cannon v. Killen*, 5 Houst. (Del.) 14, it was held that a baby was born alive when the pulsation of the umbilical cord was strong and the heart continued to beat for five minutes after the cord was cut. "A child never heard to cry, and who did not live, but whose heart beats were perceptible and could be heard, though no respiration could be induced, was 'born alive,' and was 'issue,' within a will." *Matter of Union Trust Co.*, 89 Misc. 69, 151 N. Y. S. 246. See also *Fleming v. Sexton*, 172 N. C. 250, 90 S. E. 247.

The evidence in the present case, said the Supreme Court of Nebraska, proves that the child at no time voluntarily breathed; that it made no sound; that it made no movement of any muscle of its own volition. It proves also that the child was well developed, that its heart sounds were discernible before delivery and that they were heard after the child was born, for twenty or thirty minutes according to the physician's evidence and for ten minutes according to the hospital record. The umbilical cord pulsated for fifteen or twenty minutes after it was cut. The court held that for every legal purpose the child was alive at birth. The judgment of the court below was affirmed.—*In re Stuerts' Estate (Neb.)*, 245 N. W. 412.

Sterility Not Due to Nervous Shock.—The plaintiff, a married woman, was injured in an accident. A jury awarded her \$2,500 as compensation for her injuries and suffering and \$5,000 as compensation for her supposed inability to bear children. The defendant appealed to the Supreme Court of Michigan, asking that the award for sterility be set aside. Her attending physician testified that in the accident the plaintiff received no cuts, no visible bruises and no objective signs of injury whatever. A roentgenogram taken four months after the accident showed "no pathology," no fracture, no dislocation and nothing to account for the pains in the plaintiff's neck, which her physician then concluded were due to "torn ligaments in the cervical region." Some months after the accident, he found that the plaintiff had uterine tumors, not attributed to the accident, which rendered her permanently sterile. Five months after the accident, however, he had examined her, found her physically capable of having children and advised her to do so. No children had been born to her since the accident, although at the time of the accident she had one child 8 months old, so he concluded that the plaintiff must have been made sterile by the extreme shock of her nervous system caused by the accident. "This kind of testimony," said the Supreme Court of Michigan, "is sterile." The testimony did not disclose evidentiary facts. The expert had but a theory, that the plaintiff was sterile, since she did not become pregnant; that she did not become pregnant, because of lack of ovulation; that the lack of ovulation was due to shock to her nervous system. Probative evidence must be something more tangible than a mere pyramiding of theories. The sterility here alleged was too remote and speculative, considering the nature of the injuries, to warrant the verdict rendered. The judgment of the court below awarding \$5,000 for sterility was reversed.—*Ford v. Nicol (Mich.)*, 246 N. W. 130.

Damages: Dentist's Loss of Earnings Because of Injury An Element.—The plaintiff, a dentist, was injured in an automobile accident. He sued and as an element of damages alleged the loss of earnings during absence from business. The trial court refused to allow this, and the dentist appealed to the court of appeals of Louisiana, Orleans. There is no doubt, said the court of appeals, that plaintiff's income was affected as a result of his injury. Counsel for the defendant, however, contended that loss of profits should not be allowed as damages because they were too remote, uncertain and speculative. If, said the court of appeals, the plaintiff had been employed on a

salary basis and had lost a part of his salary during his disability, there would be no question of his right to recover that loss as an element of damages. The courts are constantly awarding damages on this account to laborers who are paid by the day, week or month, and without objection as to the propriety of the awards. In what respects then does the claim of the plaintiff differ from salary or wages? The determining factor, said the court, is the certainty with which the loss has been established. When it has been definitely proved that a decrease in earnings has resulted from inability to exercise personal efforts or skill toward the production of income and the amount of such loss has been established with reasonable certainty, an award should be made. On the other hand, when the claim for profit is interwoven with other factors, such as invested capital and the industry and skill of others whose ability and zeal contribute to the result, such profits may not be the subject of an award. In the present case the record shows the gross and net income of the plaintiff for the years 1928, 1929, 1930 and 1931, and a comparison of these figures indicated that during the year of his injury, 1930, his income was less by \$2,211.67 than the average for the other three years. The appellate court concluded that the plaintiff had shown with sufficient certainty a loss of earnings attributable to his accident, in the sum stated.—*Crozat v. Toye Bros. Yellow Cab Co. (La.)*, 145 So. 60.

Recoverability of Medical Expense in Personal Injury Suit.—A court may authorize the jury, in awarding damages, to consider reasonable charges or expenses incurred or paid by the plaintiff for medical, surgical, hospital or nursing services and for medicines. To justify an instruction on this subject, such expense must be claimed in the petition, and the evidence must show not only that expenses were incurred or paid, and the amount thereof, but also that they were reasonable and necessary in view of the nature of the injury and the attending circumstances.—*Mrs. Baird's Bakery v. Davis (Texas)*, 54 S. W. (2d) 1031.

Society Proceedings

COMING MEETINGS

- American Academy of Ophthalmology and Otolaryngology, Boston, September 18-22. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Executive Secretary.
- American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Lucerne-in-Quebec, Canada, September 11-14. Dr. Magnus A. Tate, 19 West Seventh Street, Cincinnati, Secretary.
- American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 185 North Wahash Avenue, Chicago, Secretary.
- American Roentgen Ray Society, Chicago, September 25-30. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.
- Association of Military Surgeons of the United States, Chicago, September 25-27. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.
- Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.
- Delaware, Medical Society of, Wilmington, September 26-27. Dr. W. O. La Motte, 604 Medical Arts Building, Wilmington, Secretary.
- Idaho State Medical Association, Twin Falls, September 18-19. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
- Indiana State Medical Association, French Lick, September 25-27. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.
- Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
- Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
- National Medical Association, Chicago, August 13-14. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, New Jersey, General Secretary.
- Nevada State Medical Association, Las Vegas, September 29-30. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.
- New England Surgical Society, Boston, September 29-30. Dr. J. M. Birnie, 14 Chestnut Street, Springfield, Mass., Secretary.
- Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
- Pennsylvania, Medical Society of the State of, Philadelphia, October 2-5. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.
- Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.
- Vermont State Medical Society, Barre, October 5-6. Dr. W. G. Ricker, 31 Main Street, St. Johnsbury, Secretary.
- Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

25: 465-622 (April) 1933

- *Significance of Streptococcus in Trichomonas Vaginalis Vaginitis. G. F. Hibbert, Evanston, Ill.—p. 465.
- Tubal Contractions in Relation to Estrus Cycle as Determined by Uterotubal Insufflation. M. J. Whitelaw, New York.—p. 475.
- Fascia Surrounding the Vagina: Its Origin and Arrangement. N. P. Sears, Syracuse, N. Y.—p. 484.
- Lymphatic Leukemia and Pregnancy. H. K. Russell, Valhalla, N. Y.—p. 493.
- Organotherapy of Mastodynia. A. G. Gabriellian, Chicago.—p. 499.
- Granulosa Cell Hyperplasia of Ovary. J. I. Brewer and H. O. Jones, Chicago.—p. 505.
- *Small Doses of X-Ray for Amenorrhea and Sterility. L. Edeiken, Philadelphia.—p. 511.
- Tubular Adenoma (Arrhenoblastoma) of the Ovary. F. Spielman, New York.—p. 517.
- *Study of Seven Hundred and Thirty-Three Cesarean Sections. J. Daichman and W. Pomerance, Brooklyn.—p. 522.
- Rupture of Graafian Follicle, Corpus Luteum and Small Follicle or Lutein Cysts Simulating Appendicitis. J. V. Meigs and W. F. Hoyt, Boston.—p. 532.
- Problem of "Clinical Gonorrhea" in the Female. Emily Dunning Barringer, H. Strauss and D. F. Crowley, New York.—p. 538.
- Specific Bacterial Cervicitis. Anna W. Williams and Norma C. Styron, New York.—p. 547.
- Bacteriologic Study of Technics for Taking Vaginal and Cervical Cultures. F. L. Adair, G. M. Dack and E. M. J. Long, Chicago.—p. 551.
- Spontaneous Amputation of Cervix During Labor. E. J. DeCosta, Chicago.—p. 557.
- *Oral Administration of Sodium Amytal in Labor: Clinical Analysis of Two Hundred and Fifteen Cases. D. T. Van Del, Kansas City, Mo.—p. 564.
- Tuberculosis of Female Genital Tract. H. S. Bush, New York.—p. 568.
- Endometriosis of Lymph Nodes. G. H. Hansmann and J. R. Schenken, Iowa City.—p. 572.
- Use of Mortality Statistics in Rating Maternity Service. J. R. Miller, Hartford, Conn.—p. 577.
- Menstrual Intervals. Jessie L. King, Baltimore.—p. 583.
- Analysis of Fifty-Five Cases of Hemorrhage in the New-Born. L. H. Dembo, Cleveland.—p. 587.
- Osteogenesis Imperfecta. J. P. Hennessy, New York.—p. 590.
- Fibroma of Vulva with Sarcomatous Degeneration: Report of Case. H. M. Nelson, Detroit.—p. 594.
- Perforation of Fibromyomatous Uterus, Following Version. H. W. Weber, Brooklyn.—p. 597.
- Pelvic Spleen with Torsion of Pedicle. E. A. Bullard, New York.—p. 599.
- Tubal Pregnancy at Term. B. B. Wechsler, New York.—p. 600.
- Leukokraurosis (Kraurosis Vulvae) Cured by Vulvectomy: Report of Case. T. Neustaedt, New York.—p. 601.
- Unilateral Ovarian Aplasia and Homolateral Rudimentary Fallopian Tube Associated with Normally Developed Uterus: Case. N. M. De Sanctis and J. S. Diasio, New York.—p. 602.
- Uterus Duplex. L. W. Haynes, Detroit.—p. 604.
- Extensive Destruction of Genital Tract. N. R. Washburn, Philadelphia.—p. 606.
- Chronic Hypertrophic Vulvitis (Elephantiasis) Complicating Labor. J. L. Reyecraft and D. Seecof, Cleveland.—p. 608.
- Ovarian Fibroid: Report of Case. H. B. Alsbrook, New Orleans.—p. 609.

Streptococcus in Trichomonas Vaginalis Vaginitis.—Hibbert divided the 103 cases that he observed into four groups. The first group consisted of sixty-one patients who presented a typical picture of Trichomonas vaginalis vaginitis, in which the protozoon was demonstrated under the microscope in every case. The gram-positive streptococcus was the predominating organism in fifty-three cases, Doederlein's bacillus in six, and no particular organism predominated in two. The second group represented twenty-one patients in whom Trichomonas vaginalis was present but no associated growth of the streptococcus was observed. The third group of sixteen patients suffered from an acute vaginitis presenting no Trichomonas vaginalis. The fourth group of five patients presented neither organism. In these five patients the author took the responsibility of introducing the two organisms separately and together into the

vaginal canal in order to be convinced that the streptococcus was actually capable of producing a vaginitis either associated with or independent of Trichomonas vaginalis. The author's method of treating these patients was by the vaginal application of streptococcal bouillon filtrate produced from the organisms isolated from the patients. All other methods of treatment were suspended, all douches forbidden, and the patient was allowed only one tub bath daily. In indicated cases, repeated cauterization of the cervix was resorted to when cervicitis was present. The vaginal canal was dried with sterile cotton pledgets, and a large cotton tampon saturated with the bouillon filtrate was packed against the cervix and allowed to remain in place for twelve hours, during which time the patient was advised to remain off her feet to aid in retaining the fluid vaginally. This treatment was repeated from two to three times a week until the vaginitis disappeared. The author concludes that Trichomonas vaginalis may be found in the vaginal secretions of many women for long periods of time without producing an acute vaginitis. In a large percentage of the cases of acute vaginitis in which Trichomonas vaginalis existed there was an associated predominant growth of a gram-positive, nonhemolytic, short chain streptococcus, which is capable of producing an active vaginitis when not associated with Trichomonas vaginalis. By repeated vaginal application of a specific streptococcus bouillon filtrate the active growth of the organisms in the vagina dies out and the vaginitis subsides in spite of the persistence of the protozoon in the secretions.

Roentgen Treatment in Amenorrhea and Sterility.

Edeiken used small doses of x-rays to the ovaries and pituitary body in fifty-six cases of functional amenorrhea, with the result that menstruation returned to normal in forty. There was an associated sterility in thirty-three. The following plan of treatment and technic has given the author the best results: Two treatments are given weekly at intervals of three days. The first is given over the anterior pelvis through a field large enough to include both ovaries. The second is given over the pituitary body through a small field. The central ray enters just above and posterior to the middle point of a line drawn between the outer canthus and the external auditory canal. These treatments are continued for three weeks. In the patient of average size, the technical factors are 127 kilovolts, 5 milliamperes, 14 inch distance, and 5 mm. of aluminum filter for from three to five minutes. This is equivalent to from 7.5 to 12.5 per cent of the skin erythema dose, or from 50 to 80 roentgen units. The author varies this dosage according to the size of the abdomen and the thickness of the abdominal wall. He concludes that small doses of x-rays directed to the pituitary gland and ovaries are of proved value in patients with functional amenorrhea. It is of definite value in properly selected cases of female sterility. Before irradiation is undertaken, all pathologic lesions in the pelvis which may be a possible cause of amenorrhea or sterility must be excluded by a competent gynecologic examination. This form of treatment is not attended by any reaction or discomfort to the patient and, when properly administered, has no ill effects on the patients or the subsequent offspring. Cooperation is essential between the gynecologist and the radiologist.

Cesarean Sections.—Although cesarean section is on the increase, in Daichman and Pomerance's series the percentage of patients thus delivered in recent years shows a slight decrease. Of 733 cesarean sections, 25 mothers died, giving a maternal mortality of 3.4 per cent. This, the authors believe, compares favorably with similar series reported from other institutions. Any patient with a temperature of more than 100 F. by mouth for more than seventy-two hours was classified as morbid. With this as a standard, 46.8 per cent of their patients showed morbidity. The gross fetal mortality was 6.5 per cent and, corrected for prematurity and monstrosity, it was 3.7 per cent. They obtained the best results in the group of 152 elective sections. The maternal mortality was 1.9 per cent, the corrected fetal mortality 1.9 per cent, and the average number of days of elevated temperature 3.5. Although there were only 57 low flap sections in their series, the maternal mortality and morbidity are not any higher than for the non-elective classic cases, in spite of a much longer test of labor and a greater period of ruptured membranes. This can justly be used as an argument for the low flap section in the so-called potentially infected cases.

Administration of Sodium Amytal in Labor.—Van Del states that the oral administration of sodium amytal in labor has been satisfactory in the majority of the 215 cases of his study and that the oral dosage can be more definitely controlled than that by the intravenous method. Labor has not been prolonged and no deleterious effects have been noted on the babies. No idiosyncrasy to the drug has occurred. The degree of analgesia depends on the amount and time of administration of the drug. Sodium amytal is not a complete analgesic; hence it cannot be depended on in all cases. The best results have been obtained with an initial dose of 15 grains (1 Gm.), which may be increased to 20 grains (1.3 Gm.) during the course of labor. The combination of amytal and morphine gave excellent results, which were probably due to the synergistic action of the latter. During labor, careful nursing supervision was necessary, since some of the patients became restless. Sodium amytal has a definite value as an adjuvant analgesic combined with morphine and a local anesthetic in laparotrachelotomy before or during labor.

American Journal of Psychiatry, Baltimore

12: 877-1124 (March) 1933

- *Cancer Complicating and Modifying Course of Epilepsy: Review of Fifty-Five Cases. M. B. Hodskins and R. H. Guthrie, Palmer, Mass.—p. 877.
- Mental Deterioration and Deficiency: Its Consideration from the Standpoint of Certain Cerebral Vascular Volume Relationships. T. Fay, Philadelphia.—p. 893.
- Convulsive Disorders of Two Opposite Periods of Life: Puberty and Climacterium. A. Gordon, Philadelphia.—p. 929.
- Narcolepsy. S. B. Wortis and F. Kennedy, New York.—p. 939.
- Effects of Same Drug, or Other Experimental Procedure, on Convulsions Elicited in Animals by Different Experimental Methods. F. H. Pike, J. Notkin, Helen C. Coombs and S. M. Weingrow, New York.—p. 947.
- *Hereditary Factors in Epilepsy: Comparative Study of One Thousand Institutionalized Epileptics and One Thousand One Hundred and Fifteen Nonepileptic Controls. C. Stein, Palmer, Mass.—p. 989.
- Experimental Convulsions Following Lesions of Tuber Cinereum. S. B. Wortis and Dorothy Klenke, New York.—p. 1039.
- Brief Description of Psychiatric Conditions in Massachusetts: Orientation of Those Attending the 1933 Meeting of the American Psychiatric Association. H. C. Solomon, Boston.—p. 1049.
- *Effect of Administration of Sodium Amytal and Sodium Rhodanate on Mental Patients. M. M. Harris and S. E. Katz, New York.—p. 1065.
- Verification of Emotional Regression by Tests. M. Sherman and B. Crider, Chicago.—p. 1085.

Cancer Modifying Course of Epilepsy.—Hodskins and Guthrie present data which seem to indicate that acidosis and alkalosis are not immediate factors in controlling and precipitating seizures, although they may act indirectly by favoring dehydration and hydration, respectively. The influence of oxygen tension on the capillary permeability and the effect of oxygen administration on cerebral functions have been suggested as important factors in controlling convulsions. Attention has been directed to the relation of vasomotor activity to brain metabolism and other, equally obscure, physicochemical processes. In a review of fifty-five patients suffering from malignant conditions complicating epilepsy it was shown that the number of seizures decreased as the malignant condition progressed. Only eight of the fifty-five patients showed an increase in seizures during the progress of the malignant growth. In the others there was either no change or a decrease in seizures. There was a definite decrease in the frequency of seizures in thirty-two of the fifty-five patients. Alkalosis, which may be associated with cancer, obviously does not induce seizures in epileptic patients. Cachexia and dehydration incident to malignant neoplasms probably raise the convulsion threshold, which accounts for the decrease in seizures.

Hereditary Factors in Epilepsy.—The results of Stein's study of 1,000 epileptic patients and 1,115 nonepileptic controls do not justify the conclusion that the symptom complex known as epilepsy, either alone or as migraine, or as any other neuropsychiatric disorder, is an inherited condition. However, the higher incidence of neuropsychiatric disorders in the families of epileptic patients may well be explained on the basis of an existing potential or latent germ plasm defect. It is likely that this defect or vulnerability furnishes more than usually fertile ground for the production of epilepsy by such known contributing factors as trauma, infection, birth injury and alcoholism. In other words, it may be that this potential or latent germ plasm defect, whatever it may be, requires a less severe blow

than usual from these contributory or exciting factors in order to activate it into the clinical condition known as epilepsy. It is difficult to escape the conclusion that this germ plasm defect or vulnerability appears in too large a proportion in the family histories of the patients, when compared with those of the controls, to be entirely accidental.

Sodium Amytal and Sodium Thiocyanate in Mental Disorders.—Harris and Katz made a comparative study of the action of sodium thiocyanate as compared with that of sodium amytal in a group of seventeen patients presenting various psychopathologic manifestations. They observed that the intravenous injection of from 1 to 1.5 cc. of sodium amytal may produce marked transient ameliorating effects in some psychotic patients. The temporary improvement with sodium amytal seen in some of the authors' patients occurred without the induction of narcosis. The oral administration of sodium amytal, even in hypnotic doses, was not as effective as the intravenous in producing the transient ameliorating manifestations seen in some of the patients. Sodium thiocyanate was without any noticeable therapeutic effect in the same patients. Some toxic manifestations were observed in several cases following the oral administration of sodium thiocyanate. No contrasting effects were observed between sodium amytal and sodium thiocyanate which could be of diagnostic value.

American Journal of Surgery, New York

20: 1-200 (April) 1933

- Scar of Low or Cervical Cesarean Section: Clinical, Histologic Study. L. E. Phaneuf, Boston.—p. 1.
- Value of Ureteral Reimplantation in Bladder. E. Beer, New York.—p. 8.
- *Annular Stricture of Rectum and Anus: Treatment by Tunnel Skin Graft: Preliminary Report. W. L. Keller, Washington, D. C.—p. 28.
- Burns: Treatment of Shock and Toxemia; Healing the Wound; Reconstruction. A. G. Bettman, Portland, Ore.—p. 33.
- Tannic Acid: Its Use in Treatment of Abrasions and Allied Conditions. I. T. Nathanson, Chicago.—p. 38.
- Pyelography in Injuries to Kidney. H. C. Roimick, Chicago.—p. 40.
- Primary Acute Epiploitis. V. L. Schrager and S. Bergen, Chicago.—p. 45.
- Papillary Intracystic Adenocarcinoma of Prostate and Massive Benign Prostatic Cyst. B. S. Barringer, New York.—p. 51.
- Bladder Tumor: Observations on One Hundred and Fifty Cases. G. G. Smith and E. R. Mintz, Boston.—p. 54.
- Congenital Vesical Neck Obstruction in a Female Child Due to Cup-Valve Formation: Open Operation: Complete Recovery. A. Harris, Brooklyn.—p. 64.
- *Effect of Lumbar Ganglionectomy on Repair of Bone: Experimental Study. R. Zollinger, Boston.—p. 70.
- "He's Got a Back." J. E. M. Thomson, Lincoln, Neb.—p. 77.
- Eight Colon Cases. C. D. Brooks, W. R. Clinton and L. B. Ashley, Detroit.—p. 86.
- Intussusception of Appendix. G. P. Coopernail, Bedford, N. Y.—p. 95.
- Torsion of Omentum Simulating Appendicitis: Report of Case. F. D. LaRoche and T. E. Vail, Springfield, Mass.—p. 97.
- Total Suppression of Acid Gastric Secretion and Hunger Contractions by Means of Jejunostomy: Experimental and Clinical Study. E. H. Mensing, Milwaukee, and E. H. Kelley, Chicago.—p. 99.
- Incidence of Peptic Ulcer and Its Complications. J. W. Hinton, New York.—p. 102.
- New Method of Block Anesthesia: Segmental Peridural Spinal Anesthesia. A. M. Dogliotti, Turin, Italy.—p. 107.
- *Simple Technic for Inserting Silk Seton: Report of Its Use in a Case of Communicating Hydrocephalus and Description of a Seton Needle and Suggestions for Its Use. R. I. Hiller, Milwaukee.—p. 119.
- Inguinal Herniotomy: Report of One Thousand Five Hundred Cases. Demonstrating Advantages of Transplantation of Spermatic Cord External to Fascial Layers. H. R. Huston, Dayton, Ohio.—p. 122.
- Circoid Aneurysm: Report of Unusual Case. N. F. Laskey, New York.—p. 128.
- *Reevaluation of Prevailing Theories and Principles of Puerperal Infections. M. R. Robinson, New York.—p. 131.
- Small Strangulated Cyst of Umbilicus Necessitating Operation: Associated Findings of Adenomyoma. I. H. Smith, Baltimore.—p. 149.
- Direct Application of Ultraviolet Ray to Genito-Urinary System: Preliminary Report. S. Lubash, New York.—p. 153.

Annular Stricture of Rectum and Anus.—Keller advocates and describes an operation which applies only to the common varieties of troublesome annular strictures seen in the distal 3 or 4 inches of the rectum and in anal strictures. Full thickness grafts are taken from a hair-free area and thinned down as desired. If the tubular type is to be used, it is sewed with catgut in that shape around a trocar. A long ligature of black silk thread is sewed at each end. The same type of ligature is inserted when flat grafts are used. The stricture proper is exposed with a rectal speculum or retractors. A trocar and cannula are then passed under the stricture, and

the trocar is withdrawn, leaving the cannula in place under the stricture and mucous membrane. A U-shaped carrier having a long and short arm is now passed into the rectum above the stricture. The point of the short arm of the carrier is pressed through the mucosa into the open end of the underlying cannula and drawn down into it. The cannula is withdrawn, leaving the carrier beneath the stricture with its end presenting through the original point of puncture. The graft with its black silk ligature is threaded on the end of the carrier. The carrier is passed back beneath the stricture, withdrawn from the rectum, and the ligature detached. The graft is drawn into proper position by exerting a pull on the ligature presented through the stricture. The ligature ends are tied and allowed to remain as a marker until the roof of the tunnel graft is finally removed. Usually three or four grafts are placed at equidistant points. It is imperative that there be accurate coaptation of the graft throughout the area to be covered with epithelium. A water-distended Hagner or Pilscher bag not only insures proper coaptation of the opposing surfaces but also presses out clots and secretions. It also diminishes the danger of passive congestion, which usually appears about the third day. Precautions are taken to prevent defecation for seven days, and at the end of this period the bag is removed and the bowels are freely moved. The bag is again introduced and defecation discouraged for another seven days. The bag is removed and the bowels are evacuated. The rectum is cleansed with irrigations of compound solution of cresol. The roof of the tunnel over each graft is then divided. Irrigations with compound solution of cresol or 1:500 silver nitrate solution are continued for at least one week.

Ganglionectomy.—According to Zollinger, the removal of one or more of the lumbar ganglions in dogs hastened the regeneration of bone in fifteen of seventeen animals. This acceleration of bone repair was slight in eleven animals, it was definite in four, and there was more regeneration on the side opposite the ganglionectomy in two. Bone injury in the upper and middle thirds of the fibula seemed to be repaired faster than that in the lower third. The regeneration of bone was accelerated in three animals in which the sympathetic chain was interrupted nine, thirteen and thirty-four days before the bone injury. The removal of one lower lumbar ganglion in seven dogs was apparently as effective in hastening the repair of bone as a more complete resection of the chain. There was no anatomic increase in the size of the arterial bed following lumbar ganglionectomy in nine dogs in which the arterial bed was visualized by mercury. The injections were made from 19 to 114 days after the ganglionectomy.

Silk Seton.—Hiller reports a case of communicating hydrocephalus in which silk setons were inserted into the spinal canal by a simple technic, which is as follows: Under aseptic precautions, three knots overlying one another were tied at the end of a piece of number 3 black waxed silk. The patient was placed on the operating table, the head of the table lowered, and a spinal puncture between the third and fourth lumbar vertebrae made with a number 17 spinal puncture needle. The depth of the spinal canal from the skin surface was noted and the piece of silk cut to be about half an inch shorter than this distance. The stylet of the needle was then withdrawn and the knotted end of the silk forced into the shaft of the needle ahead of a number 9 wire, twice the length of the spinal puncture needle. When the bulbous end of the silk was felt to pass the end of the spinal puncture needle, the wire was held in place by a hemostat and the needle withdrawn. The wire was then withdrawn and the operation was completed. No anesthesia was required.

Puerperal Infections.—Robinson points out that pathogenic bacteria do not multiply in the blood stream of human beings (except in the most fulminant types, or as an antemortem phenomenon) but in the septic focus, from which they are discharged into the lymph and blood streams in larger or smaller quantities and at longer or shorter intervals, according to the direct or the indirect anatomic relation between the septic focus and the circulation. The course and outcome of a bacterial infection are determined far more conclusively by the location of the septic focus and by the depth and extent of the bacterial invasion than by the type of the pathogenic micro-organism causing it. Every bacterial infection is associated with a greater

or lesser invasion of the blood stream; therefore, every puerperal infection is a bacteremia of a varying degree of severity. A single entry of pathogenic bacteria into the blood stream does not constitute a severe or a fatal sepsis. The failure to recover bacteria from the blood in outspoken cases of bacteremia is due to the abstraction of the blood during or immediately after the chill, instead of from three to five hours before its occurrence, and to the neglect of making anaerobic cultures as well as aerobic. The septic focus forms an integral part of every bacterial infection, and its removal or deviation from the blood stream constitutes the only effective remedy in the treatment of puerperal sepsis. The only contraindication of this procedure is inaccessibility, or its location within an organ whose removal may cause immediate death. Septic endometritis should be treated by curettage, as long as the septic focus is limited to the endometrium, septic myometritis by hysterectomy, and pelvic thrombophlebitis by early ligation of the affected vessels and excision of the ligated part with or without a hysterectomy, depending on the condition of the uterus. Pelvic cellulitis should be incised early, as soon as the induration becomes accessible, and fluctuation should not be waited for. The best avenue of approach is the extraperitoneal, suprapubic or lateral, depending on the location of the induration. Lateral vaginal incisions should be avoided, owing to the danger of injuring the ureter or the uterine artery.

Annals of Internal Medicine, Ann Arbor, Mich.

G: 1125-1250 (March) 1933

The Senile Patient. L. F. Barker, Baltimore.—p. 1125.

Rôle of Bacteria in Allergy, with Especial Reference to Asthma. R. L. Benson, Portland, Ore.—p. 1136.

Method of Evaluation of Results in Hay Fever: Its Application to

Certain Modes of Treatment. S. M. Feinberg, Chicago.—p. 1153.

Patch Test in Diagnosis of Contact Dermatitis. S. Ayres, Jr., and N. P. Anderson, Los Angeles.—p. 1161.

*Some Observations Concerning Possible Insulin-Inhibiting Substance in Urine. E. M. Watson and W. S. Dick, London, Ont., Canada.—p. 1171.

Observations on Human Adrenals, with Especial Reference to Relative Weight of Normal Medulla. C. Quinan and A. A. Berger, San Francisco.—p. 1180.

*Bacteriophage Therapy in Bacillary Dysentery of Flexner Type. J. F. Kessel and Edythe J. Rose, Los Angeles.—p. 1193.

Tuberculosis in Officers of Regular Army. A. T. Cooper, Fort Myer, Va.—p. 1200.

Rocky Mountain Spotted Fever. G. G. Richards, Salt Lake City.—p. 1207.

Biologic and Clinical Importance of Ovary-Stimulating Hormones. C. F. Fluhmann, San Francisco.—p. 1212.

Animal Experiments with Adrenal Cortical Extracts. J. L. Carr and C. L. Connor, San Francisco.—p. 1225.

Insulin-Inhibiting Substance in Urine.—The experiments of Watson and Dick point to the presence of a substance in the urine which causes partial inactivation of insulin when the latter is added to the urine, incubated and the effect of the insulin on the blood sugar of the rabbit noted following subcutaneous injection of the mixture. The urine of diabetic patients appears to possess the insulin-inhibiting property to a slightly greater degree than does the urine of nondiabetic hospital patients and normal persons. The difference is most marked in patients with severe diabetes. This insulin-inhibiting factor is destroyed by heating the urine at 60 C. (140 F.) for several hours or by boiling the urine for a few minutes previous to the addition of the insulin. The authors assume that this substance enters the urine from the blood stream by elimination through the kidneys. Whether or not it is identical with the insulin-inhibiting substance which is believed to exist in the blood of diabetic and of nondiabetic patients is undetermined. They discuss the possible significance of the phenomenon relative to the pathogenesis of diabetes mellitus. While they cannot make a definite statement concerning the nature of the insulin-inactivating principle in the urine, its behavior with regard to heat suggests an enzyme-like character.

Bacteriophage Therapy in Bacillary Dysentery of Flexner Type.—Kessel and Rose present a study of bacteriophage therapy in sixty-eight cases of bacillary dysentery from which *Shigella paradysenteriae* of the Flexner type was isolated. Thirty-three of the patients not receiving bacteriophage were used as controls. Twelve of the treated cases appeared in the 1930 season when a specific bacteriophage was prepared for each case. The bacteriophage was administered by mouth, on an average of four days after admission to the hospital.

The average number of days of hospitalization of this group was 11.9 days, while in the control group the average was 10.1 days. No deaths were recorded in either series during this season. Twenty-three patients in the 1931 series received a bacteriophage which was later tested for lytic properties. The bacteriophage was administered by mouth within a few hours after admission to the hospital. The average number of days of hospitalization of this group was eleven days, while in the corresponding control group the average period of hospitalization was 12.1 days. There were four deaths in the series treated with bacteriophage and three in the control series during this season. These results indicate that the oral administration of bacteriophage, as used in this study, produces no marked clinical benefit over the recognized symptomatic care and treatment.

Archives of Ophthalmology, Chicago

9: 515-700 (April) 1933

- The Teaching of Ophthalmology in This Country. W. R. Parker, Detroit.—p. 515.
- Vascularization of Anterior Segment of Eye: Bearing of These Studies on Some Operative Procedures, Including a Possible Supplementary Procedure for Glaucoma: Preliminary Report. P. C. Jameson, Brooklyn.—p. 523.
- *Lipemia Retinalis Due to Diabetes Mellitus: Report of Case. M. Jaffe and W. A. Schonfeld, New York.—p. 531.
- Insurance Value of One or Both Eyes. G. L. Johnson, Durban, South Africa.—p. 538.
- *Significance of Specific Infiltration at Site of Injury in Sympathetic Ophthalmia. B. Samuels, New York.—p. 540.
- Pigmentation of Optic Nerve. A. B. Reese, New York.—p. 560.
- Calcium Content and Weight of Human Cataractous Lenses. P. W. Salit, Iowa City.—p. 571.
- Binocular Movements. A. Duane, New York.—p. 579.
- Central Vision Scotometer. C. E. Ferree and G. Rand, Baltimore.—p. 608.
- Chemistry of Lens: II. Composition of Beta Crystallin, Albumin (Gamma Crystallin) and Capsule. A. C. Krause, Baltimore.—p. 617.
- Fixation and Voluntary Nystagmus: Clinical Study. A. F. Luhr and J. L. Eckel, Buffalo.—p. 625.

Lipemia Retinalis.—Jaffe and Schonfeld report the case of a diabetic patient with lipemia retinalis, aged 30, who began to show changes in the fundus oculi toward normal after twenty-four hours of vigorous antidiabetic coma therapy. A determination of the blood fat was made on the third day after admission, when the visual degree of lipemia was somewhat less. The total blood lipoids amounted to 21.7 per cent. On a high carbohydrate and low fat content diet and adequate insulin, the lipemia retinalis disappeared rapidly. The fundus was normal when the total blood lipoids were 16.3 per cent. The blood, however, still had a slight creamy color. The authors made an attempt to reproduce the original lipemia retinalis by means of a diet having a high fat and low carbohydrate content and no insulin for several days. The blood lipoids, instead of rising, fell to 9.3 per cent. Newburgh and Marsh attributed this phenomenon to the ability of the body to utilize the carbohydrate and, as a result, to the deposition of fat in the body depots. Parker and Cullen observed that, with the onset of acidosis, the lipemia retinalis returned. The authors did not subject their patient to excessive acidosis because of complicating pulmonary tuberculosis.

Sympathetic Ophthalmia.—Samuels studied, by microscopic section, the condition of the uvea at the site of the wound of 101 eyes in which the specific infiltration of sympathetic ophthalmia was found. The principal feature of his study was the finding of two cases of primary lesions in sympathetic ophthalmia. To these he added nine cases in which the infiltration was overwhelmingly greater in the region of the wound than elsewhere. Fliri denied the existence of a primary lesion in sympathetic ophthalmia, arguing that the appearances thus interpreted by Redslob were but the signs of a localization of microorganisms that were already circulating in the blood before the injury took place. To this one may reply that the uveal tissue is often severely damaged in contusions and yet no local specific infiltration develops afterward. The essential thing is that the globe must first be opened. The failure to find a primary lesion proves nothing, whereas the discovery of a single primary lesion is of the greatest significance. The author states that the infiltration in the anterior part of the uvea which appears to be older than that in the posterior part is suggestive of a primary lesion. In certain cases the path of the infiltration from the site of the wound to the choroid could be traced by continuity with as much certainty as that from the choroid to the emissaria. The author

believes that the establishment of the existence of primary lesions strengthens the original theory, and weakens all others, that sympathetic ophthalmia is caused by a bacterium whose port of entrance is an opening in the eyeball.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

14: 197-252 (April) 1933

- Hydrotherapy in Arthritic and Rheumatic Affections. J. D. Currence, New York.—p. 197.
- Heat Therapy in Chronic Arthritis. D. Kobak, Chicago.—p. 200.
- Limitations of Physical Therapy in Arthritis. H. F. Wolf, New York.—p. 205.
- Surgical Diathermy of Carcinoma of Rectum and Its Clinical End-Results. A. Strauss, Chicago.—p. 212.
- Colon Stasis and Vaccine Therapy. M. B. Kunstler, New York.—p. 214.
- Influence of Ultraviolet on Role of Oxygen in Mineral Metabolism and Immunity Reactions. G. J. Warnshuis, Milwaukee.—p. 220.
- Infra-Red Transmission of Living Tissues. S.-K. Kaku, Formosa, Japan.—p. 225.
- Reduction of Turbinate Tissue by Medical Diathermy. F. L. Wahrer, Marshalltown, Iowa.—p. 228.
- Uses of Medical and Surgical Diathermy in Otolaryngology. W. Morrison, New York.—p. 230.
- *Diathermy Test for Sugar and Albumin in Urine. H. E. Kimble, Chicago.—p. 237.
- New Apparatus for Production of Pyrexia. W. E. Mendenhall, Indianapolis.—p. 238.

Diathermy Test.—For the past six months, Kimble, in testing the urine for albumin, has been using a simple device that consists of two specially constructed plates, insulated from each other and connected through a suitable shaft and cord to the terminals of a diathermy machine. The instrument is inserted in a test tube one third full of urine to which has been added a few drops of acetic acid. About 2,000 milliamperes of current is turned on. The albumin present is quickly coagulated. A white line appears between the two plates in from two to five seconds. The solution below the plates remains clear and is used for comparison with the "ring" above. The instrument is removed, 1 cc. of alkaline bismuth subnitrate is added, and the instrument is replaced. The same amount of current is again turned on. In a few seconds the solution between the two plates boils. It is allowed to boil for half a minute. If any sugar is present, a black ring appears between the plates.

Archives of Surgery, Chicago

26: 539-734 (April) 1933

- *Traumatic Osteomyelitis of Cranial Vault, with Particular Reference to Pathogenesis and Treatment. L. J. Adelstein and C. B. Courville, Los Angeles.—p. 539.
- *Snapping Scapula and Humerus Varus: Report of Six Cases. H. Milch and M. S. Burman, New York.—p. 570.
- Effects of Cholecystectomy on Biliary System: Morphologic Study in Dog. B. Halpert, New Haven, Conn.; A. G. Rewbridge, Minneapolis, and Claire Healey, Chicago.—p. 589.
- Lymph Vessels in Rabbit Carcinoma, with Note on Normal Lymph Vessel Structure of Testis. F. C. Lee and R. C. Tilghman, Baltimore.—p. 602.
- Reconstruction of Conjunctival Sac with Thiersch Grafts. D. M. Glover and M. W. Jacoby, Cleveland.—p. 617.
- Pericarditis Simulating an Acute Condition of Abdomen. J. Green-gard and S. J. Hoffman, Chicago.—p. 623.
- *Sarcoma, Melanoma and Leukosarcoma of Rectum. H. I. Kallet and H. C. Saltzstein, Detroit.—p. 633.
- *Experimental Thyroid Hyperplasia: Increased Intake of Chloride Combined with Diet Deficient in Iodine as a Factor. J. S. Hibbard, New York.—p. 648.
- *Effect of Insulin and Dextrose on Normal and on Obstructed Intestine. I. M. Gage, A. Ochsner and R. A. Cutting, New Orleans.—p. 658.
- Effect of Alkaline on Experimental Peptic Ulcer. J. Meyer and H. H. Rubin, Chicago.—p. 684.
- Reactions of Rat to Avertin Crystals, Avertin Fluid and Amylene Hydrate. O. W. Barlow, Cleveland.—p. 689.
- Simultaneous Respiratory Exchange and Blood Sugar Time Curves: Obtained in Apparently Nondiabetic Patients with Nonhealing Wounds. I. M. Rabinowitch, Montreal, Canada.—p. 696.
- Results of Surgical Treatment of Malignant Goiter. M. B. Tinker, Ithaca, N. Y.—p. 705.
- Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; J. Verbrugge, Antwerp, Belgium; A. A. Kutzmann, Los Angeles; A. B. Hepler, Seattle, and R. Gutierrez, New York.—p. 712.

Traumatic Osteomyelitis of Cranial Vault.—Adelstein and Courville state that traumatic osteomyelitis of the flat bones of the skull is a somewhat uncommon complication. It can be prevented in many cases by suitable treatment of the original wounds of the scalp. The diploic spaces between the tables, together with the enclosed venous system, favor dissemination of the infection, although early local reaction usually

prevents this from taking place. A suggestive classification of the lesion is based on the pathologic changes and the roentgenographic appearance of the lesion: (1) localized osteomyelitis, (2) spreading osteomyelitis, and (3) infectious necrosis of fragments in comminuted fracture of the skull. Cases of localized osteomyelitis may be subdivided into sclerosing osteitis following local injury with an opened or intact scalp, and circumscribed osteomyelitis in which infection is implanted directly into the diploe after abrasion of the outer table of the skull. The type of lesion may be anticipated by recognition of the mode and time of entrance of the infecting organism. The authors discuss the pathogenesis of the formation of sequestrums and the mode of invasion and spread of the infection, together with the probable pathologic change in each type of osteomyelitis. They present a series of six cases illustrating the various clinical types of the disease. The course of the disease is followed roentgenologically in each case. Their plan of treatment has been essentially conservative, consisting of daily dressings with balsam of peru. This substance favors the subsidence of infection and the development of granulation tissue. It is necessary to keep draining sinuses open by controlling the growth of granulations, using a silver nitrate stick when necessary. Surgical intervention is limited to the removal of sequestrums that cannot be discharged through draining sinuses.

Snapping Scapula and Humerus Varus.—Milch and Burman point out that the frequency with which snapping scapula sounds have been observed appears to vary within a wide range. From a study of the cases reported in the literature and their six cases, in which either unusually loud scapular noises or snapping was found, it appears that the causes of these sounds may be divided into three main groups: (1) those due to changes in the bony structure of the undersurface of the scapula or of the wall of the chest; (2) those due to changes in the musculature intervening between the scapula and the wall of the chest, and (3) those due to changes in bursae normally or abnormally present between the scapula and the wall of the chest. To these may be added two other groups: cases in which no reason could be assigned for the production of scapular snapping, and cases associated with certain occupational activities, such as dressmaking, needle working, piano playing and baking. Conservative treatment has been of value only in those cases in which changes in the soft structures were suspected. In some cases, simple counterirritation, as by vesication, has given satisfactory results. In others, physical therapy and massage have been of value. When definitely demonstrable bony changes are present, an effort should be made to remove the cause. In some patients the superior and in others the inferior angle of the scapula has been resected. In one of the authors' cases and in several others reported in the literature, the upper margin of the scapula was amputated, while angulated portions of the ribs or scapula were removed with some success in others. The authors have recently reexamined one of their patients with a snapping scapula who was suffering from Gaucher's disease and in whom marked changes in the skeletal system were observed. During the course of the roentgenographic examination they observed extreme downward bending of the heads of the humeri. The heads appeared in no way malformed, but the glenoid appeared to be definitely smaller than normal and to project outward like a nipple. The neck appeared markedly shorter and its angle with the head and shaft of the humerus much decreased. The plane of the anatomic neck, instead of being oblique, became almost vertical and, on the left side, the level of the upper edge of the great tuberosity was definitely higher than the head of the humerus. The authors believe that this is the first case in which a humerus varus has been observed in Gaucher's splenomegaly.

Malignant Conditions of the Rectum.—Kallet and Saltstein report seven cases of unusual rectal tumors, three sarcomas, three melanomas and one leukosarcoma. Both sarcoma and melanotic growths arise beneath the mucosa, ordinarily either in the anal canal or in the lowest part of the ampulla. It is often stated that these growths generally originate in the posterior wall. However, six of the authors' cases were on the anterior wall. When located anteriorly, the first symptoms may be due to pressure on the structures at the neck of the

bladder. In several of the histories, pain was a prominent early symptom. In one case it radiated to the penis. In another it radiated along the left sciatic nerve and was so excruciating that the patient could not sleep. In one case there were terrific tenesmus and rectal spasm out of all proportion to that seen in early rectal cancer. Another patient also had severe rectal pain. The first objective manifestation is the mass beneath the mucosa, which may be confused with a benign polyp or hemorrhoid. The first manifestation in one of the authors' cases was a small mass which was extruded with each bowel movement. In another a bulging gangrenous rectal polyp proved to be melanoma. The growth often develops locally, forming a mass almost indistinguishable from carcinoma. In sarcoma the mucosa tends to remain intact longer, and ulceration occurs late. In the melanoma cases there was little distinguishable difference between the clinical course of melanoma and of sarcoma. The metastatic deposits, on the contrary, usually exhibit heavy pigmentation, as may older tumors. One of the patients with spindle cell sarcoma is well and free from recurrence eight months after local resection, implantation of radon seeds and high voltage roentgen therapy, and another suffering from melanoma is alive seven months after resection and high voltage roentgen therapy but is rapidly failing. The other patients died from six weeks after the onset of symptoms to five years after treatment.

Thyroid Hyperplasia.—According to the experiments of Hibbard, white rats fed on a diet low in iodine in a relatively nonendemic region failed to have thyroid hyperplasia. Changes in the thyroid did not occur in rats fed on a diet poor in vitamins and leafy vegetables. A 2 per cent solution of calcium chloride, combined with a diet low in iodine, produced a definite thyroid hyperplasia in a large percentage of the experimental animals. Hyperplasia was not observed in the rats fed on a diet high in calcium lactate and low in iodine. Definite changes in the thyroid, similar to those obtained by a diet high in calcium chloride and low in iodine, were found in rats fed on a diet high in sodium chloride and low in iodine. This suggests that chlorine (or the halogens as a group) may act as a positive factor in the production of thyroid hyperplasia.

Effect of Insulin and Dextrose on Intestine.—Gage and his associates observed that, experimentally, dextrose and insulin either alone or in various combinations produced marked changes in the activity of the normal and the obstructed intestine. The changes were more marked in the normal intestine and that which had been obstructed for twenty-four hours than in the intestine obstructed for longer periods of time (forty-eight, seventy-two and ninety-six hours). Insulin alone produced an increase in intestinal activity (both in the normal and in the obstructed intestine) in 55.5 per cent of the cases, the average increases in tone and amplitude being 7.2 and 3.8 mm., respectively. Dextrose alone caused an inhibition of intestinal activity (both in the normal and in the obstructed intestine) in every instance (100 per cent), the average decreases in tone and amplitude being 22.9 and 6.9 mm., respectively. Dextrose and insulin combined resulted in an increase in intestinal activity in 44.5 per cent and no change in 55.4 per cent. Insulin preceded by dextrose produced an increase in intestinal activity in 70 per cent and no change in 30 per cent. The average increases in tone and amplitude were 12.3 and 3.3 mm., respectively. Dextrose solution preceded by insulin produced an increase in intestinal activity in 70 per cent, with average increases in tone and amplitude of 27 and 8.5 mm., respectively. In 19 per cent there was no change, and in 10.8 per cent there was a decrease in activity. The experimental results indicate that dextrose solution exerts an inhibiting effect on both the normal and the obstructed intestine which can be largely obviated by the use of insulin. The authors suggest that, clinically, dextrose alone should be used cautiously, and that it should be combined with insulin in order to minimize the inhibiting effect it may have on the intestine.

Arkansas Medical Society Journal, Little Rock

29: 225-251 (April) 1933

- Clinical Manifestations of Coronary Arterial Disease. G. W. Parson, Texarkana, Texas.—p. 225.
Acute, Purulent, Typhoid Meningitis. D. C. Lee and G. E. Tarkington, Hot Springs National Park.—p. 229.
Modern Conceptions of Pellagra. S. T. Rucker and E. R. Clardy, Memphis, Tenn.—p. 231.

California and Western Medicine, San Francisco

38: 233-336 (April) 1933

- Retinal Detachment: Its Operative Cure: Report of Cases. O. Barkan, H. G. Smith and S. F. Boyle, San Francisco.—p. 233.
 Electrocardiographic Findings in Coronary Artery Disease. R. W. Langley, Los Angeles.—p. 237.
 Eczema: Observations on Desensitization. P. K. Allen, San Diego.—p. 239.
 Roentgen-Ray Aspects of Functional Disorders of Colon. H. E. Ruggles, San Francisco.—p. 244.
 South American Trypanosomiasis of Human Type: Occurrence in Mammals in the United States. C. A. Kofoed and Fae Donat, Berkeley.—p. 245.
 Obstetric Anesthesia: Its Present Status. J. R. Burrows, San Francisco.—p. 249.
 Measles: Its Prophylactic Treatment with Blood of Immune Persons. C. Sweet, Oakland.—p. 254.

Delaware State Medical Journal, Wilmington

5: 47-70 (March) 1933

- Hematuria, with Especial Reference to Importance of Early Recognition of Conditions Causing It. W. A. Frontz, Baltimore.—p. 47.
 High Voltage Therapy in Cancer. G. C. McElfatrick, Wilmington.—p. 50.
 Progress of Medicine in Last Half Century. P. W. Tomlinson, Wilmington.—p. 52.

Journal of Bone and Joint Surgery, Boston

15: 279-566 (April) 1933. Partial Index

- Influence of Periosteum on Survival of Bone Grafts. K. O. Haldeman, San Francisco.—p. 302.
 Traction-Suspension Treatment in Fractures: Certain Commonly Neglected Factors. R. H. Kennedy, New York.—p. 320.
 *Treatment of Compound Fractures: Specific Technic for Prevention and Control of Osteomyelitis. F. B. Gurd, Montreal, Canada.—p. 327.
 *Splenic Extract Treatment of Bone and Joint Tuberculosis. T. F. Wheeldon, Richmond, Va.—p. 337.
 Methods of Measuring Pressure of Intervertebral Disk. C. K. Petter, Oak Terrace, Minn.—p. 365.
 Erosions of Articular Surfaces of Knee Joint. E. L. Keyes, St. Louis.—p. 369.
 March Foot. J. S. Speed and T. H. Blake, Memphis, Tenn.—p. 372.
 Effect of Treatment and Eradication of Foci of Infection in Chronic Arthritis (Focal Infection). L. J. Miltner, Peiping, China, and J. Kulowski, Iowa City.—p. 383.
 Anterior Dislocation of Os Lunatum. G. W. N. Eggers, Galveston, Texas.—p. 394.
 Treatment of Osteomyelitis. C. L. Hawk, Los Angeles.—p. 401.
 Role of Surgical Maggots in Disinfection of Osteomyelitis and Other Infected Wounds. W. Robinson and V. H. Norwood, Washington, D. C.—p. 409.
 *Aseptic Necrosis of Head of Femur Following Traumatic Dislocation of Hip Joint: Case Report and Experimental Studies. W. J. Stewart, Chicago.—p. 413.
 Krukenberg Stump. R. Colp and N. S. Ransohoff, New York.—p. 439.
 *Intermittent Hydrarthrosis of Knee Joint: Report of Two Cases Apparently Cured by Synovectomy, Together with Pathologic Findings. A. Krida, New York.—p. 449.
 Bifurcation Operation: Study of Late Results. C. S. Lowendorf, Youngstown, Ohio.—p. 463.
 Fracture Separation ("Slipping") of Lower Femoral Epiphysis: Report of New Procedure for Reduction. E. P. Heller, Kansas City, Mo.—p. 474.
 Slipping of Upper Femoral Epiphysis: Treatment in Preslipping Stage. S. A. Jahss, New York.—p. 477.
 Clinical and Experimental Observations with Regard to Injection of Certain Agents (Pregl's Solution) into Chronic Arthritic Joints. J. E. M. Thomson, Lincoln, Neb.—p. 483.
 Metastatic Infection of Bone and Joints as Initial Clinical Manifestation of Gastric Neoplasms. H. A. Singer and L. W. Shabat, Chicago.—p. 491.
 Does a Successful Fusion of the Tuberculous Hip Cure the Tuberculous Process? C. F. Eikenbary and J. F. LeCocq, Seattle.—p. 502.
 Use of Unna's Paste in Maggot Treatment of Osteomyelitis. E. L. Jewett, Hartford, Conn.—p. 513.
 Treatment of Volkmann's Ischemic Paralysis by Elastic Traction: Report of Seven Cases. A. Milici, New York.—p. 516.
 Splint for Fractures of Leg. H. C. Masland, Philadelphia.—p. 528.

Treatment of Compound Fractures.—Gurd describes a specific technic for the treatment of severe compound fractures with extensive laceration and contamination of tissue, which is a modification of the procedure suggested by Morison in 1916, the essential features of which are: (1) immediate operative intervention and reduction of the fracture; (2) conservative excision and radical incision of tissues; (3) proper treatment of the wound with bismuth iodoform paraffin paste, following dehydration; (4) obliteration of dead spaces and prevention of adhesion of opposing wound surfaces by means of firm packing with relatively large, petrolatum soaked, packs of bismuth iodoform paraffin paste; (5) avoidance, so far as possible, of ligatures and sutures; (6) application of a plaster-of-paris cast over a thin layer of padding with no window; (7) infrequent

dressings, the first approximately eighteen days after the injury, done in the operating room under an anesthetic, with a secondary suture and packing when indicated; (8) application of an unpadded plaster cast and felt heel as soon as union commences. Although by means of the technic that he suggests phlegmonous inflammation in even severe compound fractures is almost completely eliminated, the author's experience in cases in which diffuse cellulitis and tissue necrosis has already occurred has proved that the technic is of value. He has employed approximately the same method in the treatment of acute infective osteomyelitis with satisfactory results.

Splenic Extract in Bone and Joint Tuberculosis.—Wheeldon treated seventeen patients suffering from bone and joint tuberculosis with splenic extract. He observed that this treatment was beneficial, as improvement was noted in the patients' febrile condition, local reactions, growth, weight, color, appetite, blood composition, deformity, complications, roentgenograms, and permissible activity, and in the dispensing with support. The author's method of administration has been to give the aqueous extract of spleen orally. The patient is given a teaspoonful three times a day for a week, or until it is found that he can and will tolerate the material. After that a table-spoonful is given three times a day. This dosage contains the active principle from 1½ pounds of raw spleen. The extract is best tolerated in a sandwich, hot bouillon, tomato or orange juice or gravy. From this study the author concludes that improvement from splenic extract treatment probably will be more apparent to those who are unable to enforce a strict compliance with the accepted ideal treatment, i. e., support, recumbency, heliotherapy, proper feeding and proper aeration. The production of splenic extract is possible and the distribution is practicable. It is possible to obtain the cooperation of patients in adopting the splenic extract diet, even of those in remote sections. Splenic extract treatment has also produced improvement in osteomyelitis (acute and chronic) and in ununited fractures. Enough improvement has been shown in the blood composition to stimulate further study of this phase.

Aseptic Necrosis of Head of Femur.—Stewart reports a case of aseptic necrosis of the head of the femur following traumatic dislocation of the hip joint. The chronic arthritis of the hip appeared to be secondary to the necrosis. The picture is somewhat similar to that sometimes seen in intracapsular fracture of the neck of the femur with necrosis of the head, in which bony union occurs but the head subsequently breaks down as a result of weight bearing before bony transformation has taken place. When it becomes evident from roentgenograms that aseptic necrosis has occurred in the femoral head, weight bearing should be avoided during the period of repair. A study of the late results of hip dislocation might reveal similar cases. The author attempted to reproduce this condition in dogs and rabbits by cutting the ligamentum teres and, in some cases, also the vessels in the periosteum of the femoral neck. The experiments were only partially successful. A part of the bone died in some experiments and was transformed; but in no instance was collapse of the head and necrosis of its articular cartilage observed. The divided ligamentum teres showed a distinct tendency to unite. It appeared that the vascular supply of the head of the femur by way of vessels within the femoral neck of the animals was usually sufficient to preserve the vitality of the head. There was no regularity in the process of transformation of the femoral heads following operative circulatory interference. Apparently, the variability of the blood supply to the head of the femur is such that, by interrupting identical portions of it in a series of experimental animals, identical and progressive stages of aseptic necrosis, followed by transformation of the femoral heads, could not be demonstrated. There is a certain individual reaction of each head in a series of similar operative procedures. No head in the animals with open epiphyseal lines showed changes similar to Legg-Calvé-Perthés disease.

Intermittent Hydrarthrosis of Knee Joint.—Krida states that intermittent hydrarthrosis in general has heretofore been regarded as a medical curiosity of unknown pathogenesis and that treatment has been decidedly unsatisfactory. He reports two typical cases of intermittent hydrarthrosis of the knee joint, of diverse etiology, in which apparent cure was obtained following the operative removal of the synovial membrane. The

etiology in one of the cases was definitely traumatic and the condition was associated with a fibrous tissue mass in the calf muscle, the probable origin of this mass being a hematoma of that region. The attacks were of nine months' duration, came on five weeks after the traumatism, and persisted despite aspiration, rest in bed and autoserotherapy. No clinical hypersensitiveness could be demonstrated in the history or by exhaustive tests. The etiology in the other case was obscure but definitely related to menstruation. The semilunar cartilages had been removed at another hospital. The patient had had repeated aspirations without effect. Despite the fact that recurrences of this disorder rarely take place, the author believes that, on the basis of his observations, synovial excision offers the best prospect for the cure of this condition.

Journal of Pediatrics, St. Louis

2: 393-516 (April) 1933

- Poliomyelitis: Report of Simultaneous Cases in One Family. W. B. Stewart, Atlantic City, N. J.—p. 393.
- *Icterus Neonatorum. C. E. Snelling, Toronto, Canada.—p. 399.
- *Use of Ephedrine in Treatment of Narcolepsy in Children. A. W. Jacobsen, Buffalo.—p. 414.
- Studies in Chronic Sinusitis in Children: I. Its Relationship to Frequent Nasopharyngitis. J. S. Uhr and J. W. Pugh, New York.—p. 418.
- Massive Collapse of Lung in New-Born Infants. M. H. Bass, New York.—p. 435.
- Pyopneumothorax in Infants: Report of Case in an Infant Six Days Old. L. J. Halpern and I. Pilot, Chicago.—p. 444.
- Etiology and Treatment of Strabismus. L. T. Post, St. Louis.—p. 448.
- Congenital Absence of Fibula. P. H. Herron and H. N. Sanford, Chicago.—p. 454.
- Congenital Goiter: Thyroidectomy at Eighteen Months. Gladys R. Williamson, New Orleans.—p. 458.
- Vulvovaginitis: Hospital Versus Clinic Treatment: Analysis of Forty-Two Cases. J. T. Witherspoon and Virginia W. Butler, New Orleans.—p. 463.
- Infant Feeding in an Institutional Environment. M. L. Blatt and S. J. Nichamin, Chicago.—p. 469.
- Preservation of Human Milk: VI. Preliminary Note on Freezing Process. P. W. Emerson, Boston, and W. Platt, Syracuse, N. Y.—p. 472.
- Pellagra in Child Two Years Old: Case. E. T. McEnery, Chicago.—p. 478.
- Winckel's Disease: Report of Case, Repeated Transfusion, Recovery. S. H. Polayes and B. Kramer, Brooklyn.—p. 482.
- Erythroblastic Anemia: Report of Two Cases. J. H. Fries, E. Duhan and H. M. Shair, Brooklyn.—p. 487.
- *Bacteriologic Study of Pyelitis. Pearl Summerfeldt, Marion M. Johnston and Mildred J. Kaake, Toronto, Canada.—p. 493.
- Antiquities of Pediatric Interest. T. G. H. Drake, Toronto, Canada.—p. 499.

Icterus Neonatorum.—Snelling carried out an investigation to determine the part played by the liver in the production of icterus neonatorum. He observed that the red blood count and hemoglobin fall gradually during the first two weeks of life. The icteric index is above the normal excretory threshold at birth. It rises for a period; then it falls rapidly at first and later gradually to a normal level. The icteric index curve bears no relation to the change in erythrocytes and hemoglobin either individually or collectively. The excretion of urobilin and bilirubin in the stools for the first three days of life is at a minimum and then rises rapidly. This rise is concurrent with the fall in the icteric index observed in the blood. Bilirubin excretion is minimal by the liver in utero, and there is a period following birth during which pigment excretion is gradually assumed up to the normal physiologic level. The closure of the ductus venosus with increase of portal circulation and the discontinuance of hematopoietic activity in the liver occur during this period of liver insufficiency and may be related to the production of icterus neonatorum. The morphology of the endothelium of the liver sinuses indicates that it has been engaged in growth and hematopoiesis until birth. The endothelium of the liver sinuses probably does not assume the bilirubin removing function immediately at birth, but coincident with the morphologic change to the usual Kupffer cell this function increases.

Ephedrine in Narcolepsy.—Jacobsen reports that he treated three children, subject to recurring attacks of sleep, with ephedrine sulphate. One of the children was also subject to attacks of temporary loss of tone in the voluntary muscles. In each case the onset of the symptoms was sudden. In none was there any discoverable etiologic factor. The rapid gain in weight in two of the patients following the onset is similar to that which occurs in certain cases of encephalitis, but no symptoms suggestive of an acute infectious disease or of encephalitis could

be elicited. The attacks of sleepiness were at their height before any gain in weight had been observed. Prolonged treatment with large doses of thyroid in two of these patients produced no amelioration of the symptoms, but ephedrine sulphate promptly relieved them almost completely in all three cases. The effectiveness of the drug in controlling attacks was not diminished after prolonged use. The frequency of sleep attacks when ephedrine was omitted remained essentially at a level; the somnolent tendencies gradually decreased until all three children are now free from symptoms and are no longer receiving medication. Duration of the symptoms in the three cases was thirty, eighteen and fourteen months, respectively. That ephedrine provided only symptomatic relief and should not be credited with effecting the final cure is indicated by the fact that its sudden withdrawal at any time during the period of treatment plunged the patient into a series of sleep attacks as severe as those occurring before the drug was started. The use of ephedrine makes it possible for these children to resume immediately their normal lives.

Bacteriologic Study of Pyelitis.—From a study of 109 cases of pyelitis, Summerfeldt and her associates observed that the micro-organisms isolated from the urine were chiefly species of gram-negative bacilli. Similar bacterial species were isolated from the stool and urine in forty cases of pyelitis and, biologically and serologically, similar cultures were obtained from seven. Agglutinins for the homologous urine species were demonstrated in the serums of twenty-three cases of pyelitis, and none in the serums of twenty-five cases.

Medical Journal and Record, New York

137: 221-264 (March 15) 1933

- The Future of Industrial Surgery. W. W. Lasher, New York.—p. 221.
- Medical Cure of Goiter. R. H. Rose, New York.—p. 224.
- Arterial Hypertension and Menstrual Disturbances in Thyroid Disease: Effect of Treatment with Female Sex Hormone. I. Bram, Philadelphia.—p. 226.
- Jaundice. W. E. Fitch, Burlington, N. C.—p. 228.
- Spontaneous Hematoma of Rectus Muscles: Case of Acute Alcoholism and Acute Nephritis. B. L. Zohman, Brooklyn.—p. 232.

Nebraska State Medical Journal, Lincoln

18: 81-120 (March) 1933

- Vasculitis and Other Abnormal Circulatory Conditions of Lower Extremities. F. L. Smith, Rochester, Minn.—p. 81.
- Notes on Differential Diagnosis of Gallbladder Disease. T. R. Love, Denver.—p. 86.
- Diagnosis and Treatment of Hay Fever. E. S. Maloney, Omaha.—p. 91.
- Consideration of Therapeutic Abortion and Laparohysterotomy with Sterilization in Certain Organic Diseases Complicated by Pregnancy. H. S. Morgan, Lincoln.—p. 95.
- Early Intrinsic Cancer of Larynx: Treatment by the Laryngofissure Method: Report of Two Cases. W. A. Cassidy, Omaha.—p. 98.
- Conservative Renal Surgery. A. D. Munger, Lincoln.—p. 100.
- Report of Committee on Medical Education and Hospitals. J. S. Welch, Lincoln.—p. 102.
- Malaria in Nebraska from Contaminated Hypodermic Syringe. O. C. Nickum, Omaha.—p. 104.

Pennsylvania Medical Journal, Harrisburg

36: 483-564 (April) 1933

- *Infant Nutrition. J. R. Gerslley, Chicago.—p. 483.
- Viruses in Relation to Practice of Medicine. T. M. Rivers, New York.—p. 489.
- Thyroid Disease: Use of Continuous Venoclysis of Glucose After Thyroid Operations. J. P. North, Philadelphia.—p. 495.
- *Id.: Treatment of Hyperthyroidism. R. R. Snowden, Pittsburgh.—p. 498.
- Id.: Future of Thyroid Surgery. W. B. Mosser, Kane.—p. 501.
- Pyelitis: Pyogenic Infections of Urinary Tract During Childhood. T. O. Ellerich, Pittsburgh.—p. 505.
- Id.: Pyelitis in Children. W. H. Thomas, Philadelphia.—p. 507.
- Id.: Bacteriology of Pyelitis in Children. J. I. Fanz, Ambler.—p. 510.
- Ringworm of Toes: Second Survey of Students at the University of Pennsylvania. R. L. Gilman, Dorothy Spring and Marion H. Rea, Philadelphia.—p. 513.
- Important Oddities in Otolaryngology. N. A. Fischer, Pittsburgh.—p. 518.

Infant Nutrition.—Gerslley states that the danger of lactose fermentation in the intestine is no longer tenable in infant nutrition. Unquestionably the addition of lactose to the diet increases the hydrogen ion concentration of the intestinal contents, but this does not lead to clinical diarrhea. The large quantity of acid found in the stools in clinical diarrhea is related to some abnormality in the mechanism of absorption and of peristalsis leading to the sweeping out of the acids and is independent of the amount of lactose in the diet. The question

has been obscured in the past by: 1. The failure to realize the importance of the effect of parenteral infections on digestion and intestinal peristalsis; and ascribing the abnormal stools to unsatisfactory diets. 2. An insufficient ratio of lactose to protein in the diet permitting the growth of a mixed flora with, unquestionably, a great variety of end products. 3. The giving of a diet with a favorable lactose-protein ratio but not waiting the two weeks required for the establishment of a uniform gram-positive flora. 4. The giving of a diet in the proper proportions but not realizing the dangers of overfeeding. The author raises the question whether these intestinal reactions are of significance as to the general body health and development, and whether the proper ratio of carbohydrate to protein in the diet, besides establishing favorable conditions in the intestine, is also favorable to the general body metabolism.

Treatment of Hyperthyroidism.—Snowden points out that the treatment of hyperthyroidism should never be haphazard but should be carried out according to a consistent plan adapted to the aspects of each individual case. If the symptoms are of recent onset and the physical condition of the patient is good, a trial period of complete rest, sedatives and forced feeding should be instituted. During this medical treatment the use of compound solution of iodine should be avoided if possible, for its benefits are transitory and therefore confusing. Moreover, since the effectiveness of iodine tends to diminish with use, it should be reserved for preoperative administration. If radical treatment is necessary, surgery is to be preferred, because the desired result is obtained much more quickly and the incidence of permanent cures is somewhat higher. If roentgen treatment is undertaken, compound solution of iodine should be used advisedly, for there is a possibility that it reduces the destructive action of the x-rays on the secreting cells of the thyroid. In a thyroid crisis, the basis of treatment is to replace the tissue fluid and carbohydrate, and large doses of compound solution of iodine should be given. In the presence of persistent vomiting at least 1,000 cc. of a 10 per cent solution of dextrose should be given intravenously every twenty-four hours, and 1,000 cc. of physiologic solution of sodium chloride subpectorally. With the 1,000 cc. of dextrose solution injected intravenously should be incorporated 30 grains (2 Gm.) of sodium iodide. In a severe case, on two occasions, the author dissolved from 5 to 7 minims (0.3 to 0.4 cc.) of compound solution of iodine in the 1,000 cc. of dextrose solution injected intravenously, with no evident untoward effects and with apparently beneficial results.

Philippine Islands Med. Association Journal, Manila

12: 197-254 (May) 1932

- *Aschheim-Zondek Hormone Test for Pregnancy: Modified Technic to Suit Local Conditions; Preliminary Report. J. Y. Navarro and W. de Leon, Manila.—p. 197.
- Filipino Physiologic Constants: II. Blood Pressure. J. Salcedo, Jr., and W. Pascual, Manila.—p. 205.
- Clinical Significance of Nonengagement of Fetal Head in Primiparas. A. Villarama and P. P. Sales, Manila.—p. 210.
- Vicissitudes in Life of Medical Practitioner. S. Y. Orosa, Bacolod.—p. 216.
- Medical Ethics. S. de los Angeles, Manila.—p. 223.
- Brief Summary of Hospital Facilities in Philippines. E. D. Aguilar, Manila.—p. 230.

13: 119-190 (March) 1933

- Analysis of Inorganic and Organic Nitrogenous Constituents of Normal Urine of Filipino Students. M. Ocampo and V. Limson, Manila.—p. 119.
- Organization of Fight Against Tuberculosis in France: Notes on Tuberculosis. A. Vazquez, Manila.—p. 141.
- Functional Measurement in Ocular Muscle Surgery. C. R. Lanahan, Manila.—p. 151.
- Analysis of Sixty-Two Cases of Ectopic Pregnancy Among Filipinos. F. Esquivel, Cabanatuan, Nueva Ecija.—p. 154.
- Corneal Lesion in Beriberi. C. D. Ayuyao, Manila.—p. 158.
- Cholera in Shanghai. E. Chan and N. K. Yang, Baltimore.—p. 162.

Hormone Test for Pregnancy.—Navarro and de Leon describe a modification of the Aschheim-Zondek test for pregnancy which makes possible the unlimited application of the test in this and in other countries in which a handicap as regards the supply of animals obtains. A female rabbit of any age is prepared for laparotomy under aseptic conditions. Under ether anesthesia, a median line incision is made. The abdominal cavity is exposed and the ovaries are inspected and compared. One of them is removed and placed in a preservative

to serve as a normal control for that particular rabbit. The stump is ligated to avoid bleeding. Ripe, unruptured graafian follicles are always found in the ovaries of adult female rabbits. If in the examination the two ovaries are found to be dissimilar in appearance, the one with the greatest change is removed for control purposes. The abdominal wall is closed in two layers of peritoneum-muscle and skin, plain catgut number 00 being used for the first and abaca for the second layer. The wound is covered with a small dressing sutured to the skin at the extremities of the wound. The rabbit is allowed forty-eight hours in which to recuperate from the operation, then from 6 to 12 cc. of freshly catheterized urine is injected into the marginal ear vein of the rabbit. Forty-eight hours after the injection, another laparotomy is performed, the line of incision being made on the side of the ovary left at the first operation. The two ovaries are then compared and the results noted and, after proper identification, both are placed in solutions for histologic preparation. When the reaction is positive, the ovary is enlarged from two to four times the size of that of the normal control ovary, and "blood points" or corpora hemorrhagica appear with distinctness on or bulging out of the surface. In the case of young female rabbits from 3 to 4 months old, the authors noted that the changes in the ovary are more pronounced, both in the general increase of the size of the ovary and in the production of hemorrhagic spots. The presence of "blood points" and the definite enlargement of the ovary exposed to the action of the anterior pituitary hormone are the criteria for a positive diagnosis.

Rhode Island Medical Journal, Providence

16: 33-48 (March) 1933

- Thoracoplasty in Treatment of Pulmonary Tuberculosis. E. H. Windberg, Providence.—p. 33.
- Extrapleural Thoracoplasty in Phthisis: Results in Twenty-Two Cases. H. L. Barnes, Wallum Lake.—p. 37.
- Technic of Oxygen Therapy. A. H. Miller, Providence.—p. 38.
- Hemolytic Streptococcus. D. L. Richardson and H. E. Smiley, Providence.—p. 45.

Wisconsin Medical Journal, Madison

32: 213-280 (April) 1933

- Pharyngo-Esophageal Diverticulum. E. S. Judd and C. W. Mayo, Rochester, Minn.—p. 221.
- Principles Governing the Present-Day Treatment of Cancer. M. Cutler, Chicago.—p. 226.
- Reducing the Cost of Prescribed Drugs. H. L. Emmerich, Milwaukee.—p. 230.
- Modern Methods in Diagnosis and Treatment of Common Fungal Diseases of Skin. L. M. Wieder, Milwaukee.—p. 235.
- *Significance of Renal and Ureteral Pain. H. Culver, Chicago.—p. 241.
- Developments in Plastic Surgery of Face and Neck. G. B. New, Rochester, Minn.—p. 243.
- Principles to Be Observed in Treatment of Congenital Harelip and Cleft Palate. V. B. Hyslop, Madison.—p. 246.
- Acute Gonorrhea in the Female. J. R. Dundon, Milwaukee.—p. 248.

Significance of Renal and Ureteral Pain.—Culver states that any pain of renal origin originates within the kidney and ureter. The possibility of painful sensations due to renal torsion, traction of the main vessels and pressure on the external surface of the adjacent parietal peritoneum should be kept in mind. Abnormal impulses from the renal pelvis, ureter, renal capsule or blood vessels under certain unknown and little understood conditions may eventually be referred to some superficial area supplied by spinal nerves from the corresponding cord segment. Any condition that causes renal enlargement with rapid distention of the capsule may cause pain, and pelvic distention or any intrapelvic condition that causes irritation and subsequent spastic contractions of the pelvic musculature may result in painful sensations. Physiologic ureteral peristalsis produces no sensation, but any condition generating abnormal contractions results in pain of a radiating type along the course of the ureter. It is quite generally understood that this type of radiating pain is only the result of the downward passage of some foreign substance such as stone, clots or inflammatory or neoplastic debris, but other local pathologic processes may start these spasmodic ureteral contractions with similar clinical manifestations. Such symptoms, while not common, may result from ureteritis, ureteral kinks, strictures, or extra-ureteral pressure sufficient to produce partial obstruction. It is apparent, therefore, that the search for the cause of ureteral colic should not cease, in all instances, with negative roentgen and urine studies.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

20: 545-724 (April) 1933

- Treatment of Tuberculous Disease of the Hip Joint. A. S. B. Bankart.—p. 551.
 Accidental Ligation of Hepatic Artery: Report of One Case, with Review of Cases in Literature. R. R. Graham and D. Cannell.—p. 566.
 Paths of Gallbladder Infection: Experimental Study. D. H. Patey and L. E. H. Whithy.—p. 580.
 *Acute Infective Osteomyelitis: Review of Two Hundred and Sixty-Two Cases. L. N. Pyrah and A. B. Pain.—p. 590.
 "Hypertrophy of Pylorus" in an Adult. P. T. Crymble and T. Walmesley.—p. 602.
 Experimental Inquiry into Association Between Gallstones and Primary Cancer of Gallbladder. H. Burrows.—p. 607.
 Polyorchidism. R. H. Boggan.—p. 630.
 Carcinoma of the Male Urethra. R. H. Boggan.—p. 640.
 Diffuse Polyposis of Stomach: Case. N. Sinclair.—p. 645.
 *Treatment of Acute Empyema in Infancy and Childhood: Report of Seventy-Five Cases Treated by Closed Drainage. J. D. McEachern.—p. 653.
 Congenital Dislocation of Hip in Case of Multiple Congenital Deformities. R. W. Butler.—p. 662.
 Account of Case of Thyroid Malignancy. A. L. D'Ahreu.—p. 666.

Acute Infective Osteomyelitis.—Pyrah and Pain report the results of operation in a series of 262 consecutive cases of acute infective osteomyelitis. Seventy-one patients died, a mortality of 27.1 per cent. Of sixty-four patients treated by primary incision of the periosteum, sixteen died, a mortality of 25 per cent. Some of these needed a secondary operation later. The average results of this form of treatment are much better than those of the gutter operation. The amount of sequestrum formation is much less than the area of compact bone from which the periosteum has been stripped. The gutter operation was performed in the 176 cases of average severity. There were fifty-two deaths (29.5 per cent). Primary partial diaphysectomy was performed in twenty cases with one death, and H. Winnett Orr's method was used in two cases, both proving fatal. The authors believe that the results of their series of cases and the arguments they put forward give support to what is definitely a strong tendency among most surgeons who have recently written on acute osteomyelitis; namely, the more conservative treatment of the disease. In a case of average severity the subperiosteal abscess should be incised for approximately its full length, and particular care should be taken to see that the incision reaches the epiphyseal cartilage, since it is in the region of the epiphyseal line that pus escapes from the cancellous tissue by one of the vascular foramina. The region of the metaphysis should then be explored either by a small trephine or by a drill. If pus is found, compact bone should be removed only so far as to uncover the zone occupied by the pus. Provision should be made for drainage and for irrigation. If no pus is found, no further opening of the bone should be done. If the patient is severely ill or if the case is one of the acute type in which a subperiosteal abscess of considerable size has formed within two or three days and in which the toxemia is profound, only periosteal incision should be done; in surviving patients it will probably be necessary to open the bone some days later.

Treatment of Acute Empyema in Childhood.—McEachern used the following method in applying closed drainage in seventy-five consecutive cases of acute empyema in children: The operation is performed under local anesthesia and a number 16 or 18 (French) catheter is used. Artery forceps clamped on the catheter near the end prevent the entrance of air through its lumen. The trocar with cannula is introduced between the ribs at the most convenient point. The trocar is withdrawn and the index finger is placed over the end of the cannula to exclude air until the catheter is inserted. The catheter, which has a lateral eye of half an inch above the terminal one, is allowed to project into the cavity 1½ inches and the cannula is removed. Before the clamp on the end of the catheter is removed to take off the cannula, a clamp is placed on the proximal side of the catheter. The opening about the catheter is sealed by successive layers of absorbent cotton and collodion until a collar, 5 inches in diameter and half an inch thick, is built up about the tube. In order that

this dressing may adhere firmly to the skin and the adjacent catheter, these parts must be thoroughly clean and dry. The dressing will remain tight longer if the catheter is held immovable in the chest wall. To ensure that the dressing will not be disturbed in moving the child back to bed, it is fanned for twenty minutes. The child is then returned to bed with the clamp still on the end of the catheter. To allow the dressing to set more firmly, this clamp is left in position for three hours longer; then the catheter is connected with the drainage apparatus, the clamp is removed and the pus is allowed to drain off. The apparatus consists of three ordinary Winchester bottles with tight-fitting rubber stoppers pierced with two holes, some glass tubing, a container for surgical solution of chlorinated soda, and some rubber tubing of suitable size. If the effusion is large and slow decompression of the lung is desired, it can be accomplished by removing and applying the clamp at intervals as desired. Irrigation of the cavity is begun twenty-four hours after the catheter has been inserted. These irrigations are carried out every two hours during the day and three times at night. The top of the fluid in the container for surgical solution of chlorinated soda is never allowed to be more than 18 inches above the opening in the chest, as too much pressure tends to force the fluid out around the tube and under the dressing, thus loosening it from the skin. To irrigate, a clamp is placed on the rubber tube leading to the bottle used as a trap to prevent the washings from the empyema cavity to become mixed with the water from the siphon; then the clamp is removed from the tube leading from the bottle containing the solution and the solution is allowed to run into the chest until it causes pain or stops from the equalization of pressure. This clamp is then replaced and the one on the tube leading to the suction apparatus removed, when the contents of the cavity drain off into the bottle used as a trap. In forty-six of the seventy-five cases the organism was the pneumococcus, in nine the streptococcus, in six the staphylococcus, in one a mixed infection of pneumococcus and streptococcus, in one a mixed infection of pneumococcus and staphylococcus, in six "no growth" was reported and in six no report was made. The age of the patients was from 4 months to 11 years. There were two deaths, both in children under 2 years of age, giving a mortality of 2.66 per cent for the series, and a mortality for those under 2 years of age of 9.52 per cent.

East African Medical Journal, Nairobi

10: 1-36 (April) 1933

- Rift Valley Fever. R. Daubney and J. R. Hudson.—p. 2.
 Tuberculosis in East Africa, with Especial Reference to Clinical Aspect. C. Wilcocks.—p. 20.
 Birth Weight of Africans. M. M. Shaw.—p. 32.

Glasgow Medical Journal

1: 105-144 (April) 1933

- Observations on Tattooing. J. L. Orr.—p. 105.
 Multiple Myeloma. A. M. Crawford.—p. 111.

Indian Medical Gazette, Calcutta

68: 185-244 (April) 1933

- Analysis of One Hundred and Fifty Cases of Asthma. H. W. Acton and Dharmendra.—p. 185.
 Gram-Negative Bacilli Isolated from Sputum in Cases of Asthma. H. W. Acton and Dharmendra.—p. 192.
 *Results Obtained With Antigametocyte Treatment Only, Without Antilaval Measures. W. W. Clemesha.—p. 199.
 Certain Injuries of Wrist That Are Frequently Overlooked. P. C. Dutta.—p. 202.
 Hydatid Disease in South India. V. Mahadevan and T. B. Menon.—p. 206.
 Zondek-Ashheim Test for Pregnancy as Studied in Two Hundred Cases. K. B. Mukerjee.—p. 208.

Antigametocyte Treatment.—During the malaria season, Clemesha carried out three carefully controlled experiments on the labor population of three estates (total, 825). The results show that it is possible to control entirely the spread of malaria by careful antigametocyte work. This appears to be quite easy in cases in which the prophylactic doses are given over long periods, as a regular procedure. When given over a short period of time, that is, during great danger, they are equally successful, provided certain conditions are rigidly adhered to. If a high degree of success is wished for, a thorough elimination of gametocyte carriers in the labor population must be

undertaken. This usually means examining the blood of all children and adults in bad health, while babies in arms should receive particular attention, because of the likelihood of these missing the biweekly dose. The search for and cure of gametocyte carriers should always be undertaken at least a month before the onset of the dangerous period. In a community receiving two doses of quinine with plasmochin a week, those who do contract malaria show extraordinarily few malarial parasites (trophozoites or schizonts) in the peripheral circulation. Malignant tertian and benign tertian gametocytes would not have been found if the dose had been taken regularly. Quartan parasites and gametocytes were much more frequently encountered and were much less acted on by the plasmochin than the other two. Two doses of quinine with plasmochin a week cause the attack, even of the malignant tertian form, to be mild in character. The duration of the fever is usually from two to four days instead of from eight to twelve days, and profound disturbance in health is only observed in susceptible newcomers to the district. The cost for a whole year for the regular treatment of the entire labor force is much less than that occasioned by a severe outbreak of malaria.

Journal of Hygiene, London

33: 151-294 (April) 1933

- Comparative Study of Physiologic Effects on Children of School Heating by Hot Water Radiators and by Radiant Heat from Electric Ceiling and Wall Panels. G. P. Crowden and M. Hetherington, assisted by W. R. Luxton.—p. 151.
- Observations on Bacterial Flora of Some Slaughterhouses. R. B. Haines.—p. 165.
- Bacterial Flora Developing on Stored Lean Meat, Especially with Regard to "Slimy" Meat. R. B. Haines.—p. 175.
- Estimation of Water Pollution by Biologic Reaction. L. Lloyd.—p. 183.
- Organism Resembling the Newcastle Type of Dysentery Bacillus Associated with Cases of Dysentery. A. W. Downie, E. Wade and J. A. Young.—p. 196.
- *Cereal Food Poisoning and Its Relation to Etiology of Pellagra. R. Stockman and J. M. Johnston.—p. 204.
- Sporadic Infections in Aberdeen Due to Food Poisoning Organisms of Salmonella Group. J. Smith.—p. 224.
- Experimental Evidence of Heat Resistant Gastro-Intestinal Irritant Produced by Bacilli of Salmonella Group. W. G. Savage.—p. 233.
- Application of Photo-Electricity to Determination of Bacterial Growth Rate. R. J. V. Pulvertaft and C. G. Lemon.—p. 245.
- Felton Antibody: Its Distribution and Purity as Determined by Salting Out Methods. Annie M. Brown.—p. 252.
- Nature of Antibodies. A. Eastwood.—p. 259.
- *Further Experiences with Intravenous Antitoxin Treatment of Scarlet Fever H. S. Banks.—p. 282.

Cereal Food Poisoning.—The experiments of Stockman and Johnston show that all the cereal grains (rice, rye, wheat, oats and corn) examined proved to be poisonous to monkeys when they constituted the bulk of their diet, even when relatively large amounts of fruit, milk and butter were consumed along with them. They were poisonous also to rabbits and guinea-pigs. Also acids isolated from the various grains and given as sodium salts, hypodermically and orally, to healthy animals with their ordinary diet, were poisonous and produced similar symptoms. The pathologic changes were the same in the two tests and implicated chiefly the nervous system, but the bones and viscera also were more or less involved. The pathologic changes fully accounted for the various symptoms. The poisonous substance is in all an acid or acids but possibly not the same in all. The most probable explanation of their action is that they not only are irritant and poisonous in themselves but also have a secondary effect of gradually or suddenly withdrawing alkalis and especially calcium from the blood and tissues. It is not, therefore, a question of vitamins or of any kind of deficiency in the grains, for all the animals were getting vitamin-containing foods in abundance. The larger the quantity of cereal food consumed and the larger the dose of acid given orally or hypodermically, the more severe were the symptoms, facts which militate against any idea of a deficiency. As regards pellagra, there is evidence that it is occasionally caused by cereals and diets other than maize, and therefore there must be a factor common to them all. This, the authors think, is explained by the presence of a positive poison and by their acidity, with consequent injury to the nervous and other tissues of the body and a disturbance of the calcium and alkali balance. However, pellagra exists as a maize disease with its symptoms dependent on functional disturbances and organic lesions of the nervous system. The prominent skin lesion is probably due to a trophoneurosis which renders the skin unduly sensitive to any

irritant, such as sun rays, or merely to pressure as it occurs in persons lying in bed and not exposed to the sun. The monkeys and rabbits in the authors' studies reproduced, probably as nearly as they can be reproduced in animals, the symptoms and lesions of pellagra, and the pathologic changes in the nervous system were identical with those described by numerous investigators as occurring in pellagra. The rabbits showed marked skin lesions and a thinning of the bones. The incidence of pellagra in maize eaters is essentially a question of the quantity eaten. It occurs only when maize bulks preponderantly in the dietary and it has been demonstrated repeatedly and convincingly that the disease can be abolished or prevented by lessening the quantity of maize and substituting other articles of food.

Antitoxin Treatment of Scarlet Fever.—During a period of four and a half years, Banks administered intravenously scarlatinal antitoxin in 1,204 cases of scarlet fever. The results obtained confirm his tentative conclusions reached in 1928 that the acute stage of the disease can generally be arrested in from twelve to twenty-four hours, complications almost wholly prevented, and the period of morbidity reduced to a little more than two weeks. These effects were obtained in hospital wards in which more than 50 per cent of the cases, generally about 75 per cent and including all the worst, were so treated, and it is possible that the reduction of mass infection obtained in the wards by this means is an essential condition for obtaining such results. Under such conditions, relapses and cross infections were rare. Some evidence was obtained that antitoxin administered intravenously in the acute stage of scarlet fever largely prevents the onset of septic complications, including the late septic type itself, scarlatina anginosa, and that it may be of striking benefit in the treatment of the septic type, even at a late stage. The author states that it is important that the clinical potency and freedom from dangerous reactions of each individual batch of serum be proved. The indications for the intravenous injection of antitoxin in scarlet fever are toxic and septic scarlet fever, the severer forms of scarlatina simplex and definite cases of scarlet fever with faucial inflammation, rash and pyrexia. Its use is contraindicated in all cases with a history of asthma, eczema, hay fever, frequent urticaria or other manifestation of allergy; in all cases with a history of a previous injection of serum, especially within the previous two years, except when serum is urgently indicated; in cases in which any test for serum sensitiveness is positive, and in mild cases presenting little or no faucial inflammation and little or no rash.

Journal of Laryngology and Otology, Edinburgh

48: 145-224 (March) 1933

- Treatment of Lateral Sinus Thrombosis. W. F. Wilson.—p. 145.
- Reconsideration of Mechanics of Auditory Apparatus. A. G. Pohlman.—p. 156.
- 48: 225-308 (April) 1933
- Development of Mastoid Air Cells. A. B. Smith.—p. 225.
- Vasomotor Affections of Nose and Their Relation to Bronchial Asthma. S. Van Leeuwen.—p. 238.
- Id.: W. Howarth.—p. 247.
- Id.: A. F. Wright.—p. 252.

Lancet, London

1: 785-840 (April 15) 1933

- Physiology of Gallbladder and Its Functional Abnormalities. C. Newman.—p. 785.
- Reactions with Alum-Toxoid in Diphtheria Prophylaxis. J. C. Saunders.—p. 791.
- Lower Segment Cesarean Section: Use of Willett's Scalp Forceps and Uterine Compressor. V. Bonney.—p. 796.
- *Serous Meningitis of Allergic Nature: Report of Case. J. H. Sheldon.—p. 798.
- Erythremia with Jaundice, Hepatic Cirrhosis and Hematemesis: Case: Remarks on Erythremia and Erythroleukemia. F. P. Weber.—p. 800.

Serous Meningitis.—Sheldon reports a case in which an attack of acute tonsillitis was followed, after an interval of about eight days, by a generalized scarlatiniform rash and by two groups of symptoms, which developed concurrently: (1) a series of disturbances of the larger joints, characterized by pain and effusion, the latter being especially prominent in the knees, and (2) a serous meningitis, of sufficient severity to give rise to 4 diopeters of papilledema. Both these groups of symptoms subsided as a peritoneal abscess due to a hemolytic streptococcus developed. Its drainage led to complete recovery. The diagnosis of hydrocephalus, due to a serous meningitis, was

established by the normal character of the cerebrospinal fluid, its increased pressure and the subsidence of symptoms, including the papilledema, after two lumbar punctures. The patient would not allow her tonsils to be removed; therefore a culture could not be obtained. The degree of leukocytosis when the patient was first seen suggested that the peritoneal abscess may have been developing even then, and it may well have been the focus from which was derived the streptococcus toxin that gave rise to the allergic symptoms. These may have been due merely to a direct toxic action on the synovia and the choroid plexus, but, if so, it is not a common association, and the demonstration of the possibility of serous hydrocephalus resulting from such an allergic state as serum sickness justifies one in extending this conception to cover the events of the present case. The author suggests that, as a result of previous attacks of tonsillitis, the patient had become sensitized to a streptococcus toxin and that the rash, joint effusions and serous hydrocephalus, which followed after the usual period of about eight days, were in the nature of an allergic reaction.

Medical Journal of Australia, Sydney

1: 421-448 (April 8) 1933

- Conquest of Climate. R. W. Cilento.—p. 421.
Note on Use of Steam for Providing Suction. G. V. Doyle.—p. 432.
*Note on Vaccine Treatment of Pneumonia. V. Davies.—p. 433.

Vaccine Treatment of Pneumonia.—Davies used pneumococcus vaccine (mixed), B strength, in treating twenty-two patients suffering from pneumonia, eight of whom received their injection on the first day. Four of these had normal temperatures within twenty-four hours and all eight had temperatures below 37.8 C. (100 F.) within thirty-six hours, with no subsequent rise. There was at the same time a corresponding improvement in both the general condition and the lung signs. In all the other patients, that is, those receiving treatment between the second and the fourth day of the illness, there was some sign of improvement following the administration of the vaccine, and all patients' illnesses ran a mild and uncomplicated course to recovery. In all these patients, the pneumonia was either the primary disease or secondary to influenza and bronchitis, except in one case of typhoid. The twenty-two patients include a variety of types, such as a baby of 1 year with double lobar pneumonia, a woman of 55 who had had asthma for twenty years, a man of 76 with glycosuria, and a woman of 82 who was almost bedridden. It is, of course, well known that the virulence of the organisms that cause pneumonia varies greatly from year to year. Consequently a vaccine that gave good results in one epidemic might possibly not be so effective in another. The other important point is the diagnosis, which would have to be confirmed in a large number of cases before the treatment could be absolutely assessed.

South African Medical Journal, Cape Town

7: 205-240 (April 8) 1933

- Our Collective Lesion. P. J. Olivier.—p. 207.
Chaulmoogra Oil in the Treatment of Leprosy. P. D. Strachan.—p. 210.
*Epituberculosis. H. A. V. Loots.—p. 214.
Hypophyseal Cachexia. L. D. Adler.—p. 216.

Epituberculosis.—Loots states that the points of interest in epituberculosis are the length of time the condition endures, varying from several months to more than a year, and the fact that recovery invariably occurs in these cases. The age at which the condition occurs is the first three years of life. There is little or no fever. The child is out of sorts. There are no bacilli in the sputum or the stool. The fact that these cases do not come to necropsy makes it difficult to prove that they are tuberculous in nature. The following facts, however, taken together, prove that they are tuberculous: (1) The Mantoux reaction is always positive, and a positive Mantoux, though by itself not of much value in later childhood, carries more weight when encountered in a child of 3 or less; (2) there is frequently a history of open tuberculosis in another member of the household, and (3) tubercle bacilli can be demonstrated in aspirated material. The author has had under observation two cases of epituberculosis for a period of nine months. These were slowly clearing up, but unfortunately on lung puncture no organisms were recovered. If allergic manifestations like erythema nodosum in tuberculosis and rheumatic fever are kept in mind, as well as the skin tests with tuberculin

which are dependent on allergic reactions, such an explanation is feasible and probable. Goldberg and Gasul reported cases of this nature in which the consolidation cleared up after a period of a year but promptly reappeared on the application of the Mantoux intradermal tuberculin test reaction. Quite different would be the progress if the condition were a tuberculous bronchopneumonia. The other condition likely to cause confusion would be unresolved pneumonia, which is quite common in children, but the history gives no evidence of a sudden onset, nor does fibrosis or bronchiectasis follow, which so often happens in unresolved pneumonia.

Chinese Medical Journal, Shanghai

47: 223-330 (March) 1933

- The World Leprosy Situation. W. H. P. Anderson.—p. 223.
Leprosy in China. J. L. Maxwell.—p. 227.
Present Problem and Organization of Leprosy Research. H. W. Wade.—p. 233.
Early Symptoms of Leprosy: Notes on Differential Diagnosis. F. Reiss.—p. 248.
Treatment and Prognosis of Leprosy. L. F. Heimbürger.—p. 252.
Outpatient Leprosy Work. S. N. D. Fraser.—p. 257.
Problem of Leprosy in Hangchow. S. D. Sturton.—p. 263.
*Problem of Segregation and Care for Arrested, Negative Cases of Leprosy. C. M. Hasselmann.—p. 270.
Kiungkiang Leper Colony. C. M. Galt.—p. 284.
*Pellagra or Pellagroid in Leper Settlements in Korea. R. M. Wilson.—p. 287.
Work and Influence of Mission Leprosy Institutions. W. H. P. Anderson.—p. 290.
Present Status of Leprosy Question in China. W. Lien-tch.—p. 294.

Segregation in Leprosy.—Hasselmann states that compulsory segregation has utterly failed in the Philippine Islands to result in any noticeable decrease in the incidence of leprosy as well as in the number of annual admissions of new cases. It inspires fear and keeps patients in the early stages of the disease from seeking medical advice, until they have had a chance to pass into a more advanced stage. The control of leprosy must have as its foremost object the discovery of as many early incipient cases as possible and the periodic examination of household members and others exposed to infection. With this aim, the establishment of skin policlinics and treatment dispensaries seems to achieve much more than less liberal, costly segregation methods. The establishment of attractive segregation settlements for the mutilated and for the supposedly highly infectious patients, without any too rigid enforcement and not too far away from the home districts of the patients, and with enough tillable land provided for the patients and their dependents, promises to lower the cost of leprosy control. In the individual treatment of a case of leprosy, a proper and sufficient, well balanced diet and the careful treatment of any intercurrent disease are imperative. The treatment of the disease must not lose sight of the more important goal: the treatment of the patient. The high incidence of true relapses (46.4 per cent) among paroled negative cases demands continued reexamination of the patient and his family over a long period. One cannot avoid the question whether the last acid fast bacilli of Hansen ever disappear entirely in perhaps even the majority of persons once infected, regardless of medicinal, so-called specific therapy. Therefore, in the arrested, negative cases the prevention of relapses lies rather in the diligent preservation of a high general resistance by proper and sufficient food, occupational and physical exercise and high morale.

Pellagra or Pellagroid in Leper Settlements.—For the past six or seven years Wilson noted among the inmates of the institutions at Soonchun and Fusan a condition similar to pellagra which might be termed pellagroid. It is evidently a food deficiency problem, possibly of the fat soluble vitamin A, from the fact that it responds quickly to treatment with pork or cod liver oil. In the early spring a series of cases appear showing stomatitis and a skin eruption. On the skin of the back of the hands, the neck, the ankles and occasionally the face there appears a dermatitis as a reddish or brown condition quite like a sunburn. After a few days or weeks the condition becomes darker, the skin cracks and later desquamation takes place. With treatment about 80 per cent of the skin trouble disappears entirely; a little remains over to the next season, showing a roughened skin. The gastro-intestinal tract shows disturbance, sore tongue and mouth, gas and distention; constipation and diarrhea in the later stages, though not in al

presence retards the healing of the pulmonary lesion, while their removal exerts a beneficial effect. The authors emphasize the value of Benedek's method of skull percussion with the aid of which correct localization of the tumor was made possible. In contradistinction to the value of the percussion method, encephalography demonstrated minimal lateral deviation of the ventricle. The authors point out that the results of operation on the meningeal tuberculosis are quite favorable even in the presence of severe pulmonary involvement. The occurrence of postoperative sensory disturbances of the opposite arm in the area of innervation of the nervus cutaneus antibrachii lateralis as well as of the median nerve is the result of operative trauma to the cortex.

Stomach Contents After Alcohol Test Meal.—Vogels investigated the value of microscopic study of gastric sediment after an alcohol test meal. The contents were secured by the fractional method. Seventy-one patients, including those with gastroduodenal ulceration, acute and chronic gastritis, gastric carcinoma and gastric complications resulting from diseases of other organs, were subjected to the study. Gastric ulcer, especially the callous variety, was characterized by pronounced epithelial desquamations. In acute gastritis, the increase in leukocytes was a characteristic feature. Gastritis accompanying certain general disease states showed the same result. The stomach, after a resection, presented a cytologic picture similar to that of a stomach which had not been operated on; namely, a preponderance of epithelium in the sediment. The bacterial flora of the stomach was found to be quite rich and was little influenced by the degree of acidity. Admixture of particles of food indicate motor disturbance occasioned by organic or functional pyloric stenosis. The oxydase reaction was found to be of value in differential diagnosis because of its ability to preserve the leukocytes in the sediment, especially in the presence of marked fermentation, and because it enables one to differentiate the leukocytes into myeloid and lymphocytic types.

Jahrbuch für Kinderheilkunde, Berlin

139: 277-400 (June) 1933

- Comparative Pharmacologic Investigations on Normal Living and Surviving Small Intestine. W. Catel.—p. 277.
Influence of Sodium Acetate on Inflamed Intestine. W. Catel.—p. 309.
*Etiology of Diarrheal Disturbances in Nurslings. Rosel Goldschmidt.—p. 318.
Septic Allergic Vascular Disturbances. K. Klinke and M. Silberberg.—p. 359.
Simple Table for Determination of Length and Weight of Children from Birth to the Age of 14. A. Adam.—p. 377.
Perforation of Tuberculous Lymph Nodes into Bronchus or Trachea, Respectively. H. Orel.—p. 379.

Etiology of Diarrheal Disturbances in Nurslings.—In her study on the bacteriology of diarrheal disturbances of nurslings, Goldschmidt pays particular attention to a type first isolated by Adam and designated by him as the dyspepsia colon bacillus. This type is serologically well characterized and can be differentiated from other types of *Bacillus coli* and from the bacteria of the typhoid-paratyphoid-dysentery group. Demonstration by means of the culture method alone does not produce optimal results, but agglutination is required for a reliable identification. With few exceptions, the dyspepsia colon bacillus occurs only in the intestinal tract of nurslings. It can be demonstrated in approximately 50 per cent of the children having dyspepsia, and it is also occasionally demonstrable in nurslings who are free from intestinal disturbances. The bacillus is only rarely demonstrable in the gastric contents, the urine and the heart blood of dyspeptic nurslings, and it is extremely rare in healthy adults. It has never been found in nurslings having a parenteral *Bacillus coli* infection with healthy intestine, and it has not been detectable among numerous types of *Bacillus coli* from cow's milk. The symptomatology of diarrheal disturbances in which the dyspepsia colon bacillus is present does not differ from other dyspepsias. Moreover, the occurrence of the dyspepsia colon bacillus is by no means confined to the syndrome of intoxication of nurslings. This is demonstrated by the fact that only a small number of the children having diarrhea, in whom the dyspepsia colon bacillus was detected, reached the stage of intoxication. There were signs indicating that the diarrheal disturbances in which dyspepsia colon bacilli were found are contagious. They appear in large numbers at a time, and epidemiologic studies

could be made in several stations of the clinic. Bacillary dysentery, one of the most frequent house epidemics, could be excluded in these cases. The author reaches the conclusion that the dyspepsia colon bacillus is one of the many etiologic factors of the diarrheal disturbances in nurslings.

Klinische Wochenschrift, Berlin

12: 929-968 (June 17) 1933

- Pneumococcus* Types in Healthy Population. M. Gundel and L. Seitz.—p. 929.
*Subendocardial Hemorrhages. F. Külls and H. Strauss.—p. 933.
Influence of Thyroid on Tissue Oxidation. W. Büngeler.—p. 933.
Elimination of Prolan in Urine of Old Women. C. Hamburger.—p. 934.
*Functional Significance of Quantity of Blood. J. Plesch.—p. 935.
Clinical Aspects of Catarrh of Small Intestine and of Soap Dyspepsia. O. Porges.—p. 938.
Microscopic Observations on Living Organs. W. Hartoch.—p. 942.
Extraction of Blood Calcium Increasing Substance from Placenta. C. Bomskov and H. Brenum.—p. 944.
Therapy of Peripheral Circulatory Insufficiency. C. E. Schuntermann.—p. 946.
Blood Group Ferment and Elimination of Blood Group Substance. E. Wittebsky and T. Satoh.—p. 948.
Modification of Epicutaneous Tuberculin Reaction by Ultraviolet Irradiation. T. Gröneberg and H. Saufferlin.—p. 949.

Subendocardial Hemorrhages.—In their studies on heart and trauma, Külls and Strauss frequently observed subendocardial hemorrhages in the left ventricle. They think that the mechanical theory of the pathogenesis of these hemorrhages is the most convincing. It is based on the fact that the anatomic structure of the endocardium around the conduction system is different from that of the other portions of the heart. Here is found an extremely loose subendocardial connective tissue and an abundance of vessels that evidently serve the special purpose of the conduction system. The authors had an opportunity to examine the hearts of 235 large slaughtered animals about half an hour after death. Of this number, 125 had been killed according to the Jewish ritual (the complete severance of the neck by three or more deep cuts into the trachea and carotids to effect great loss of blood). Subendocardial hemorrhages were found in all of these animals, while of the 110 animals who had been shot only 10 per cent showed subendocardial hemorrhages. In cats that had been killed by means of carbon dioxide, the subendocardial hemorrhages were found in only 2 per cent. These observations indicate that the mode of death is the determining factor and that the defense movements are of minor significance. The sudden cessation of the fine and autonomically regulated coronary circulation, the interruption of the central nervous regulation and the mechanical injury, particularly of the vagus, which all take place in killing according to the Jewish ritual, must be the causes of the subendocardial hemorrhages.

Functional Significance of Quantity of Blood.—Plesch shows that the regulation of the quantity of blood is largely determined by the venous pressure. The connection between the quantity of blood and the venous pressure produces an approximation of the beat volume of the two sides of the heart, and this process can be entirely mechanical without any nervous regulation whatever. But there are regulatory mechanisms helping the two sides of the heart to adapt themselves to the functional requirements, such as the active contraction of the auricle and the contraction or increase in tonus of other venous organs; for instance, the spleen. These regulatory mechanisms suffice under physiologic conditions, but in pathologic conditions, such as throttling at the atrioventricular ostium, stiffening of the ventricular wall, or lack of tonus in large areas of the venous system, the functionally produced beat volume may not be adequate for the maintenance of the circulation. In this case, new blood must be formed in order to increase the auricular pressure. The author shows that venous stasis in decompensation is a compensation for the insufficiency of the volume. He considers edema a compensatory mechanism in that it gives outside support to the venous vessels and is probably a factor in the maintenance of the beat volume. However, the two sides of the heart are not equivalent in regard to the problem of edema. A decompensation of the right heart and of the venous vessels of the systemic circulation produces stasis and edema in the venous organs of the systemic circulation but leaves the lesser circulation unimpaired; however, if the left heart or the venous regulation of the lesser circulation are damaged, the blood vessels of the lungs become enlarged

according to the method of Sawyer, Kitchen and Lloyd. It may now be used in place of convalescent serum for the vaccination of human beings against yellow fever. The method of the foregoing authors makes use of anti-yellow fever serum and yellow fever virus. The serum taken from a convalescent or recently vaccinated person must have an immunizing power of 100. Anti-yellow fever horse serum may be substituted for the convalescent serum in the proportion of 1:5. The yellow fever virus employed is originally obtained from monkeys and attenuated by repeated passage through mice. It is emulsified in nine times its volume of human serum, filtered, put in ampules and desiccated in the congealed state. For vaccination, 0.5 cc. of the antiserum per kilogram of body weight is injected subcutaneously; six hours later from 0.3 to 0.5 cc. of the emulsion of the virus (distilled water is added to make up the original volume) is injected subcutaneously in the arm. Sixteen persons were vaccinated by this method by Sawyer, Kitchen and Lloyd and twenty-five by Findlay without serious mishaps. The reactions usually consisted of tenderness at the site of the serum reactions, a slight rise in temperature about thirty hours after injection of the virus, and headache and slight photophobia. While the problem of vaccination against yellow fever is not entirely solved, recent experiences permit the hope of a solution. From now on the danger of vaccination is less to be feared than the risk incurred by laboratory workers and inhabitants of infected areas.

Giornale Medico dell'Alto Adige, Bolzano

5: 321-400 (May) 1933

- Echinococcus of Liver with Cholelithiasis Syndrome Simulating Neoplasm. P. Jacchia.—p. 321.
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Complete Heart Block Cured by Specific Treatment. V. Apuzzo.—p. 357.
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Exudative Contralateral Pleuritis in Course of Therapeutic Pneumothorax. C. Tiengo.—p. 379.

Pleuritis in Therapeutic Pneumothorax.—Tiengo treated two tuberculous patients with artificial pneumothorax in which pleuritis arose as a complication. Examination of the first patient revealed a participation of the right pleura through exudative reaction in a grave bronchopneumonic process of the right upper lobe, a contralateral pleuritis due to a gradual rise of the contralateral exudative phenomenon and its benign course, a rapid local and general improvement of the patient after abandonment of the pneumothorax, and a favorable outcome three years after interruption of pneumothoracic treatment. The second patient showed improvement due to the pneumothorax during the first month of treatment. Contralateral pleuritis set in suddenly after thirty days of treatment with aggravation of the symptoms. The author does not doubt the tuberculous origin of the pleuritides; in both cases Rivalta's reaction was positive and the leukocytic formula was lymphocytic. In the second case there was invasion of the underlying parenchyma leading to death from a bilateral pulmonary tuberculosis. The process spread to the contralateral lung immediately after the appearance of the pleuritis. In one case, the contralateral pleuritis was established a few hours after insufflation of air and, in the second case, one month from the beginning of the treatment when it had not yet created a sufficient collapse of the diseased lung. The author states that the pneumothorax can act at a distance on organs and viscera which have no relation to the diseased lung. In the case of one author, every refilling was followed by hematuria due to a tuberculous kidney. The febrile attacks and cutaneous manifestations following the first refillings appear to be anaphylactic; they include the focal reactions observed in the course of tuberculin therapy. Some authors found that the hemoclastic tuberculous patients after tuberculin treatment of tuberculin or albumose-free tuberculin, according to the person and remain in a state of tuberculin administered, with the number of foci, which are often undiagnosed in various organs. This

allergic phenomenon as the effective cause of contralateral pleuritis. If antigen material passes into the circulation and can produce such reactions, it seems logical that old localizations should receive sufficient stimulus from this allergizing material to renew their exudative activity. There also is the possibility that the contralateral pleuritis may occur independent of collapse therapy. The author advocates the application of pneumothoracocentesis in cases presenting considerable contralateral effusions and serious circulatory and respiratory disturbances.

Minerva Medica, Turin

1: 809-904 (June 16) 1933

- Anaphylactic Interpretation of Some Encephalic Forms. E. Pesci.—p. 873.
Recognition of Hypoglycemic Manifestations. M. Massa and S. Maugeri.—p. 876.
Modifications of Renal Parenchyma in Tumors of Kidney. A. Ciminata.—p. 879.
*Value of Renal Decapsulation in Painful Hematuric Nephritis. G. Cirio.—p. 887.
Modifications of Production of Antibodies Observed in Healthy Man During Sojourn in High Mountains. P. Ravenna.—p. 893.

Renal Decapsulation in Hematuric Nephritis.—Cirio states that there is a great disparity in the reports on decapsulation treatment for nephritis. He holds that in less cases, when the life of the patient is not in danger, decapsulation is the most preferable operation. In cases in which there is evident inflammatory history and pain accompanies the hematuria there has been a high percentage of successful decapsulations. The hematuria depends on a chronic inflammatory factor, which involves a small portion of the kidney, is particularly persistent and usually does not respond to prolonged medical treatment. In these cases, decapsulation causes a hyperemia leading to improvement of the circulation of the organ and of its trophic condition and favoring resolution of the inflammation. According to Stropeni, decapsulation has a soothing effect on pain, an attenuated microbicidal action, a reabsorbing effect on the exudates, dissolvent effects through which fungosities disappear, nutritive effects and favorable influence on the regeneration of the tissues. The author states that decapsulation or even partial enervation, if the capsule destroys the sensitive nerve fibers, reduces the intensity of the stimulus transmitted to the center so that it no longer arrives at the specific spinal-thalamic centers of the pain. He reports three cases of painful hematuric nephritis in which decapsulation was the operation of choice. Two of the patients were continually treated for from two to three years after operation but, eventually, were completely cured. The other patient was treated until three months after operation and showed satisfactory results.

Policlinico, Roma

40: 963-1002 (June 19) 1933.

- *Calcemia and Calcip : almonary T : rna.—p. 963.
Anatomopat : cal Contri : tional Patho-
genesis of : o Cirrhosis. : p. 972.
Contribution to : nitis Due : p.

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cases. The tongue is often red on the border and there is pain on eating. Nervous symptoms are not marked, though there were three insane patients. The author's thirty-six patients gave the following history. The average duration was 2.6 years, some having a relapse for seven seasons; twenty-five complained of sore mouth, twenty-eight of weakness and nine of digestive disturbances; eight showed a rash on the face, ten on the neck, thirteen on the ankles, three on the body, and thirty-one on the backs of both hands. The symptoms usually cleared up after a diet rich in pork fat. The author is now giving cod liver oil and adding pork fat to the diet, hoping to prevent the occurrence of the disease.

Archives des Maladies de l'Appareil Digestif, Paris

23: 577-688 (June) 1933

- *Hemotherapy and Shock Treatment in Severe Ulcerous Colitis. R. Bensaude, P. Oury and H. Dany.—p. 577.
Chemical Composition of Bile in Course of Chronic Diseases of Gall-bladder. H. Colombies, P. Fabre and A. Rescañères.—p. 593.
Closing Reflex of Pylorus and Its Modification Under Influence of Treatment with Large Doses of Hydrochloric Acid. L. E. Beyline and N. W. Timoféiev.—p. 604.
Modern Method for Complete Examination of Rectum. J. F. Montagne.—p. 623.
Acute Yellow Atrophy of Liver. A. Landau and W. Hejman.—p. 634.

Treatment in Severe Ulcerous Colitis.—Bensaude and his associates think that the treatment of severe ulcerative colitis must take into account both etiologic factors involved; that is, infection and predisposition. They employed auto-hemotherapy in five cases of severe rectocolitis, with an evolution varying from two months to five years. This treatment produced a rapid improvement in four cases in which all the customary methods of treatment had failed. The fifth patient was improved but had incessant recurrences, which were stopped each time by this therapy. The hemorrhages disappeared after several days even in the most hemorrhagic forms. The mucus and the number of stools returned to normal in from ten to fifteen days, and the change in their consistency was the most pronounced sign. The general condition was improved gradually and the four patients were dismissed, cured. Improvement of the functional symptoms was markedly in advance of the improvement of physical signs. It is too early to draw conclusions as to a permanent cure, but none of the four patients have had a recurrence after the lapse of several months. The results resemble those obtained by Kalk, who cured several cases of ulcerative colitis by giving the patients serum sickness by injections of horse serum. The cures obtained by anti-dysenteric serum in colitis of nondysenteric origin may also be explained by the mechanism of shock. The same may be true of Bargen's serum.

Paris Médical

1: 521-548 (June 17) 1933

- Osteo-Articular and Infantile Surgery. A. Mouchet and C. Røderer.—p. 521.
Treatment of Dorsolumbar Fractures Without Paralytic Symptoms. P. Mathieu.—p. 538.
*Painful Syndromes of Sacrolumbar Region. G. Roudil.—p. 542.
*Vertebral Angioma. C. Røderer.—p. 544.

Painful Syndromes of Sacrolumbar Region.—Roudil was consulted by a woman, aged 26, with pain in the lower part of the spine, which had come on gradually two days after a violent hyperextensive movement of the spine when sitting down. The pain, which was aggravated by walking and relieved by decubitus, radiated into the pelvic girdle and upper part of the buttocks. Roentgenography disclosed a congenital malformation consisting of an unusual type of bilateral and total sacralization of the fifth lumbar vertebra. The body of the fifth lumbar vertebra was in synostosis with the first sacral vertebra, and the two transverse processes were joined in like manner to the iliac bones, but there was an osseous fissure completely separating the transverse processes from the rest of the vertebra and creating a veritable articulation between the vertebral portion comprising the body, the lamina and the superior articular processes and the two transverse processes. The width of the fissure, the regularity of its borders and the absence of a violent trauma ruled out the idea of a fracture. The author thinks that the hyperextensive movement of the spine made by the patient caused a distention of the fibroligamentous tissue at the level of the nearthrosis. This was followed by arthritic manifestations, the nearthrosis being probably more sensitive

to a slight trauma. A small celluloid girdle molded to the sacrolumbar region made the pain and muscular contraction disappear.

Vertebral Angioma.—Røderer reports a case discovered by chance during examination of the roentgenograms of the spine of a young woman who complained of a persistent, diffuse pain in the dorsolumbar region of the spine which had appeared after a fall on the back. She had a slight scoliosis with right dorsal and left lumbar convexity of long duration. Roentgenography disclosed a typical image of angioma involving the fifth dorsal and first lumbar vertebrae. The disks and bodies of the intervening vertebrae appeared absolutely normal. The fifth dorsal vertebra was more transparent than its neighbors; it had a border but the central portion had a speckled appearance caused by many irregularly scattered light spots. The trabeculation was much enlarged and in general in a vertical direction, one side being eroded, the other slightly swollen. The first lumbar vertebra was of approximately normal size, but the lesions were more developed, giving the appearance of a pumice-stone. The direction of the trabeculae could not be distinguished. The porous aspect was seen best in the profile view. It was not limited to the body but extended to the spinous and articular processes. The author says that the characteristic appearance of this roentgenographic image permits it to be differentiated from cancer, which spares the disks, and from various forms of spondylitis, which resorb them more or less. Its recognition is important, as the angioma is sensitive to roentgen rays. In this case the two vertebrae of transition in a double scoliosis were affected; the author suggests that the porous condition of the angiomatous vertebra may have caused the scoliosis.

Presse Médicale, Paris

50: 1009-1024 (June 24) 1933

- *Hepatitis of Elimination. N. Fiessinger and R. Cattani.—p. 1009.
Congenital Mucoid Cysts of Nasal Vestibule. P. Jacques.—p. 1010.
Rôle of Predisposition in Puerperal Eclampsia. Levy-Solal and de Pariente.—p. 1013.
Extirpation of Stellate Ganglion by External Route. F. M. Cadenat.—p. 1014.
*Anti-Yellow Fever Vaccination. G. J. Stefanopoulo.—p. 1016.

Hepatitis of Elimination.—In experiments on dogs, Fiessinger and Cattani found that the intravenous injection of bacteria is followed by the rapid production of lesions of the hepatic parenchyma, which seem to be linked with the elimination of the bacteria by the biliary tract. Hepatic lesions were produced by the nonpathogenic *Bacillus mesentericus* and by the pathogenic *Bacillus paratyphosus A* and *Bacillus paratyphosus B*. In the case of *B. mesentericus* the bacteria appeared in the bile three quarters of an hour after intravenous injection. The hepatitis of elimination appeared almost immediately after the injection of the bacteria and attained its maximum at the end of twenty-four hours; no trace of it could be found fifteen days later. When the experiment was repeated on one of the dogs one month later under identical conditions, no hepatic lesions were produced. It appears as though the first injection created an active immunity. These facts indicate that there are no bacteria devoid of toxicity. Even if the massive introduction of a strain of bacteria into an organism leaves it unaffected, this does not mean that the passage of the bacteria through the hepatic cells is innocuous. Besides the general pathogenicity there is a local pathogenicity manifesting itself by cellular lesions of slight intensity and rapid regression. These lesions do not appear if the organism is protected against the injected bacteria by vaccination or serum therapy. Killed bacteria (*B. mesentericus*) also produced discrete but distinct hepatic lesions. This indicates the danger of vaccination in a person with a diseased liver. The elimination of bacteria by the excretory organs appears to be one of the chief means of defense of the organism against infection, but it cannot take place without the production of lesions in the organ traversed, which, in case of massive or prolonged infection with highly virulent bacteria, may be severe and irreparable. The frequency of hepatic and renal lesions in the course of septicemias appear to result from the elimination of the bacteria by way of these organs.

Vaccination Against Yellow Fever.—Stefanopoulo reports that the anti-yellow fever serum produced by Pettit and himself in horses or large monkeys has been successfully substituted for human convalescent serum in the vaccination of monkeys.

according to the method of Sawyer, Kitchen and Lloyd. It may now be used in place of convalescent serum for the vaccination of human beings against yellow fever. The method of the foregoing authors makes use of anti-yellow fever serum and yellow fever virus. The serum taken from a convalescent or recently vaccinated person must have an immunizing power of 100. Anti-yellow fever horse serum may be substituted for the convalescent serum in the proportion of 1:5. The yellow fever virus employed is originally obtained from monkeys and attenuated by repeated passage through mice. It is emulsified in nine times its volume of human serum, filtered, put in ampules and desiccated in the congealed state. For vaccination, 0.5 cc. of the antiserum per kilogram of body weight is injected subcutaneously; six hours later from 0.3 to 0.5 cc. of the emulsion of the virus (distilled water is added to make up the original volume) is injected subcutaneously in the arm. Sixteen persons were vaccinated by this method by Sawyer, Kitchen and Lloyd and twenty-five by Findlay without serious mishaps. The reactions usually consisted of tenderness at the site of the serum reactions, a slight rise in temperature about thirty hours after injection of the virus, and headache and slight photophobia. While the problem of vaccination against yellow fever is not entirely solved, recent experiences permit the hope of a solution. From now on the danger of vaccination is less to be feared than the risk incurred by laboratory workers and inhabitants of infected areas.

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Policlínico, Rome

40: 963-1002 (June 19) 1933. Practical Section

- *Calcemia and Calcipexy in Pulmonary Tuberculosis. A. Starna.—p. 963.
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cases. The tongue is often red on the border and there is pain on eating. Nervous symptoms are not marked, though there were three insane patients. The author's thirty-six patients gave the following history. The average duration was 2.6 years, some having a relapse for seven seasons; twenty-five complained of sore mouth, twenty-eight of weakness and nine of digestive disturbances; eight showed a rash on the face, ten on the neck, thirteen on the ankles, three on the body, and thirty-one on the backs of both hands. The symptoms usually cleared up after a diet rich in pork fat. The author is now giving cod liver oil and adding pork fat to the diet, hoping to prevent the occurrence of the disease.

Archives des Maladies de l'Appareil Digestif, Paris

23: 577-688 (June) 1933

*Hemotherapy and Shock Treatment in Severe Ulcerous Colitis. R. Bensaude, P. Oury and H. Dany.—p. 577.

Chemical Composition of Bile in Course of Chronic Diseases of Gall-bladder. H. Colombies, P. Fabre and A. Rescanières.—p. 593.

Closing Reflex of Pylorus and Its Modification Under Influence of Treatment with Large Doses of Hydrochloric Acid. L. E. Beyline and N. W. Timoféiev.—p. 604.

Modern Method for Complete Examination of Rectum. J. F. Montagne.—p. 623.

Acute Yellow Atrophy of Liver. A. Landau and W. Hejman.—p. 634.

Treatment in Severe Ulcerous Colitis.—Bensaude and his associates think that the treatment of severe ulcerative colitis must take into account both etiologic factors involved; that is, infection and predisposition. They employed autohemotherapy in five cases of severe rectocolitis, with an evolution varying from two months to five years. This treatment produced a rapid improvement in four cases in which all the customary methods of treatment had failed. The fifth patient was improved but had incessant recurrences, which were stopped each time by this therapy. The hemorrhages disappeared after several days even in the most hemorrhagic forms. The mucus and the number of stools returned to normal in from ten to fifteen days, and the change in their consistency was the most pronounced sign. The general condition was improved gradually and the four patients were dismissed, cured. Improvement of the functional symptoms was markedly in advance of the improvement of physical signs. It is too early to draw conclusions as to a permanent cure, but none of the four patients have had a recurrence after the lapse of several months. The results resemble those obtained by Kalk, who cured several cases of ulcerative colitis by giving the patients serum sickness by injections of horse serum. The cures obtained by anti-dysenteric serum in colitis of nondysenteric origin may also be explained by the mechanism of shock. The same may be true of Bargen's serum.

to a slight trauma. A small celluloid girdle molded to the sacrolumbar region made the pain and muscular contraction disappear.

Vertebral Angioma.—Røderer reports a case discovered by chance during examination of the roentgenograms of the spine of a young woman who complained of a persistent, diffuse pain in the dorsolumbar region of the spine which had appeared after a fall on the back. She had a slight scoliosis with right dorsal and left lumbar convexity of long duration. Roentgenography disclosed a typical image of angioma involving the fifth dorsal and first lumbar vertebrae. The disks and bodies of the intervening vertebrae appeared absolutely normal. The fifth dorsal vertebra was more transparent than its neighbors; it had a border but the central portion had a speckled appearance caused by many irregularly scattered light spots. The trabeculation was much enlarged and in general in a vertical direction, one side being eroded, the other slightly swollen. The first lumbar vertebra was of approximately normal size, but the lesions were more developed, giving the appearance of a pumice stone. The direction of the trabeculae could not be distinguished. The porous aspect was seen best in the profile view. It was not limited to the body but extended to the spinous and articular processes. The author says that the characteristic appearance of this roentgenographic image permits it to be differentiated from cancer, which spares the disks, and from various forms of spondylitis, which resorb them more or less. Its recognition is important, as the angioma is sensitive to roentgen rays. In this case the two vertebrae of transition in a double scoliosis were affected; the author suggests that the porous condition of the angiomatous vertebra may have caused the scoliosis.

according to the method of Sawyer, Kitchen and Lloyd. It may now be used in place of convalescent serum for the vaccination of human beings against yellow fever. The method of the foregoing authors makes use of anti-yellow fever serum and yellow fever virus. The serum taken from a convalescent or recently vaccinated person must have an immunizing power of 100. Anti-yellow fever horse serum may be substituted for the convalescent serum in the proportion of 1:5. The yellow fever virus employed is originally obtained from monkeys and attenuated by repeated passage through mice. It is emulsified in nine times its volume of human serum, filtered, put in ampules and desiccated in the congealed state. For vaccination, 0.5 cc. of the antiserum per kilogram of body weight is injected subcutaneously; six hours later from 0.3 to 0.5 cc. of the emulsion of the virus (distilled water is added to make up the original volume) is injected subcutaneously in the arm. Sixteen persons were vaccinated by this method by Sawyer, Kitchen and Lloyd and twenty-five by Findlay without serious mishaps. The reactions usually consisted of tenderness at the site of the serum reactions, a slight rise in temperature about thirty hours after injection of the virus, and headache and slight photophobia. While the problem of vaccination against yellow fever is not entirely solved, recent experiences permit the hope of a solution. From now on the danger of vaccination is less to be feared than the risk incurred by laboratory workers and inhabitants of infected areas.

Giornale Medico dell'Alto Adige, Bolzano

5: 321-400 (May) 1933

- Echinococcus of Liver with Cholelithiasic Syndrome Simulating Neoplasm. P. Jacchia.—p. 321.
Question of Tympany over Liver as Early and Pathognomonic Sign of Gastroduodenal Perforation. R. Broglio.—p. 327.
Malignant Tumors of Right Kidney with Atypical Symptomatology. F. Donati.—p. 331.
Action of Some Products of Cellular Metabolism on Capillaries. G. Carboognin.—p. 347.
Complete Heart Block Cured by Specific Treatment. V. Apuzzo.—p. 357.
Syndrome of Medullary Pressure Due to Osteoma of Fourth and Fifth Lumbar Vertebrae. G. Molinis.—p. 366.
*Exudative Contralateral Pleuritis in Course of Therapeutic Pneumothorax. C. Tiengo.—p. 379.

Pleuritis in Therapeutic Pneumothorax.—Tiengo treated two tuberculous patients with artificial pneumothorax in which pleuritis arose as a complication. Examination of the first patient revealed a participation of the right pleura through exudative reaction in a grave bronchopneumonic process of the right upper lobe, a contralateral pleuritis due to a gradual rise of the contralateral exudative phenomenon and its benign course, a rapid local and general improvement of the patient after abandonment of the pneumothorax, and a favorable outcome three years after interruption of pneumothoracic treatment. The second patient showed improvement due to the pneumothorax during the first month of treatment. Contralateral pleuritis set in suddenly after thirty days of treatment with aggravation of the symptoms. The author does not doubt the tuberculous origin of the pleuritides; in both cases Rivalta's reaction was positive and the leukocytic formula was lymphocytic. In the second case there was invasion of the underlying parenchyma leading to death from a bilateral pulmonary tuberculosis. The process spread to the contralateral lung immediately after the appearance of the pleuritis. In one case, the contralateral pleuritis was established a few hours after insufflation of air and, in the second case, one month from the beginning of the treatment when it had not yet created a sufficient collapse of the diseased lung. The author states that the pneumothorax can act at a distance on organs and viscera which have no relation to the diseased lung. In the case of one author, every refilling was followed by hematuria due to a tuberculous kidney. The febrile attacks and cutaneous manifestations following the first refillings appear to be anaphylactic; this would include the focal reactions observed in the course of collapse therapy. Some authors found that the hemoclastic crisis occurred in tuberculous patients after tuberculin treatment with Koch's tuberculin or albumose-free tuberculin. The reactions vary according to the person and remain in relation with the dose of tuberculin administered, with the general resistance and with the number of foci, which are often mitigated, latent and undiagnosed in various organs. This would suggest the

allergic phenomenon as the effective cause of contralateral pleuritis. If antigen material passes into the circulation and can produce such reactions, it seems logical that old localizations should receive sufficient stimulus from this allergizing material to renew their exudative activity. There also is the possibility that the contralateral pleuritis may occur independent of collapse therapy. The author advocates the application of pneumothoracentesis in cases presenting considerable contralateral effusions and serious circulatory and respiratory disturbances.

Minerva Medica, Turin

1: 809-904 (June 16) 1933

- Anaphylactic Interpretation of Some Encephalic Forms. E. Pesci.—p. 873.
Recognition of Hypoglycemic Manifestations. M. Massa and S. Maugeri.—p. 876.
Modifications of Renal Parenchyma in Tumors of Kidney. A. Ciminata.—p. 879.
*Value of Renal Decapsulation in Painful Hematuric Nephritis. G. Cirio.—p. 887.
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Policlinico, Rome

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increase in the calcemia and cachexia; one lost in weight while the other gained slightly. The author states that in all patients manifesting an improvement in the general condition together with a decrease of the calcium content of the blood the tissues draw from and absorb more of the circulating calcium than normally. The author concludes that viosterol, like calcium, does not decrease the calcium content of the blood by itself but that, when the two are administered together, they tend to modify the calcemia.

Deutsche medizinische Wochenschrift, Leipzig

59: 873-910 (June 9) 1933

- *Biologic, Anatomic and Pathogenic Foundations of Therapy of Poliomyelitis. H. Pette.—p. 873.
- Culture of Virus of Poliomyelitis in Artificial Medium. E. Gildemeister.—p. 877.
- Paradentosis. Adrien.—p. 879.
- Best Anesthesia in Each Individual Case. W. Benthin.—p. 880.
- *Treatment of Severe Anemia of Gastric Hemorrhages with Large Doses of Iron. Annemarie Buresch.—p. 882.
- *Investigations on Determination of Sex from Urine of Pregnant Women. J. Manger.—p. 885.
- Course and Relapse of Dementia Paralytica After Infection Therapy. W. Kirschbaum.—p. 887.
- Acute Ascending Poliomyelitis (Landry's Paralysis). Milark.—p. 890.
- Treatment of Anthrax with Large Doses of Arsphenamine. W. Engelhardt.—p. 891.
- Study of Activity of Vocal Cords by Means of Cinematography. G. Panconcelli-Calzia.—p. 891.

Therapy of Poliomyelitis.—Pette says that, in spite of the extensive involvement of the spinal cord and of the brain, the symptoms of poliomyelitis consist almost exclusively in the abolishment of the motor functions, whereas other manifestations, such as parkinsonism, are never observed, although the pallidum and the substantia nigra are nearly always involved. The essential nature of poliomyelitis is reflected in the impairment of the ganglion cells. Severe parenchymal damage is found only in the motor portions of the spinal cord, whereas in the other regions of the central organ the gliogenous and the mesodermal reactions predominate. It could be proved in animal experiments that the segments of the spinal cord are not involved all at once but become so one after the other. This factor is the anatomic foundation of a successful treatment at the time of the first appearance of the paralytic manifestations. The fact that the virus of poliomyelitis is neurotropic and causes symptoms only within the central nervous system and never in the mucous membranes seems to indicate that the catarrhal manifestations that precede the paralytic stage of poliomyelitis are not caused by the virus of poliomyelitis but by other infections. The author considers the frequent occurrence of catarrhs in close proximity to occasional poliomyelitis as an indication that the nonspecific infection is a predisposing factor for the paralytic stage. At first the cells show changes during the preparalytic stage. The significance of these changes lies in the fact that the stage of the process can thus be determined. The author states that serum therapy is the method of choice. The earlier it is started the better are its prospects, although success may still be expected even if it is not begun until the first paralytic symptoms appear.

Large Doses of Iron in Treatment of Anemia.—Buresch describes six cases of severe anemia caused by gastric hemorrhages, which in turn were produced by gastric or duodenal ulcers. Large doses of reduced iron, that is, from 3 to 4 Gm. daily, effected rapid improvement. Not only was the blood status favorably influenced, but the general condition also improved. The author discusses the various theories concerning the mode of action of iron therapy. Observations on a patient with achlorhydria convinced her that the theory, which considers the presence of free hydrochloric acid as an absolute requirement for the efficacy of iron therapy, does not necessarily apply to all cases. She calls attention to a phenomenon of which she found no record in the available literature on iron therapy; namely, a pronounced eosinophilia, which in one patient reached 41 per cent. So far this phenomenon had been observed only in the stage of regeneration in pernicious anemia undergoing liver therapy.

in an old Egyptian papyrus, according to which the sex of a fetus can be determined from the action of the urine of a pregnant woman on germinating grains of barley and of wheat. He found that more rapid growth of barley compared to that of wheat speaks for the female sex of the fetus, whereas a non-accelerated or a retarded growth of barley indicates that the fetus is male. The author made such tests on the urine of 100 pregnant women. The majority of them were in the last stage of pregnancy. The observations enabled the author to make a correct diagnosis of the sex of the fetus in eighty of the women; in the other twenty, the diagnosis was erroneous.

Deutsche Zeitschrift für Chirurgie, Berlin

240: 471-662 (June 10) 1933

- Extensive Venous Thrombosis Without Embolism. W. Stöhr.—p. 47.
- Local Infiltration Anesthesia and Conduction Anesthesia. L. Drüner.—p. 481.
- *Contribution to Question of Sepsis. H. Schmitz.—p. 493.
- *Results with Freund-Kaminer Intracutaneous Cancer Reaction. H. Kolnretz and H. Weber.—p. 533.
- *Symptoms and Radical Treatment of Conglomerate Tubercle of Brain. L. Benedek and T. Hüttl.—p. 554.
- Function of Surviving Kidneys in Artificial Bacteremia. H. and E. Schmutzler.—p. 567.
- *Value of Cytodiagnosis in Urologic Diagnosis. H.-J. Lauber.—p. 592.
- Oxydase Reaction as Diagnostic Sign. C. Vogels.—p. 601.
- Symptoms of Internal Hernias. P. Moritsch.—p. 601.
- Studies of Pulmonary Circulation with Aid of Tonopneumatoscope. G. Salvioli and G. A. Chiurco.—p. 624.
- Functional Meaning of Falciform Ligament of Liver. E. Seifert.—p. 629.
- Serum Therapy in Peritonitis. A. Schmechel.—p. 636.
- Rare Case of Ossified Grawitz Tumor. N. Moro.—p. 642.
- Leukoplakia of the Ureter. K. Gerlach.—p. 646.
- Erysipelas Carcinomatosum. G. Binder.—p. 654.

Freund-Kaminer Intracutaneous Cancer Reaction.—Kotnretz and Weber state that the Freund-Kaminer cancer test is based on the difference in the behavior of normal serum and that obtained from cancer patients toward cancer cells. Normal serum dissolves cancer cells, whereas serum of patients having carcinoma does not and, when mixed in equal amounts with normal serum, the serum of cancer patients will protect cancer cells against destruction. It was further established that the intestinal contents acted in the same way as the serum and that the addition of animal fatty acids enhanced the destructive power against cancer cells. It was likewise shown that *Bacillus coli* has the power of destroying cancer cells, but if grown on an acid medium it develops a protective power for the same cells. According to Freund and Kaminer, the cell-destructive substance is contained in normal fatty acid and can be extracted from it by ether. The "destructive" substance is presumably bound up in some other combination with the fatty acids. This last acid, designated as the "carcinoma acid," is utilized in the test. The technic consists in injection of 0.05 or 0.03 cc. of the acid intracutaneously into the flexor surface of the forearm. Below this a 0.03 cc. control injection of physiologic solution of sodium chloride or of tricesol is made. A positive reaction manifests itself in from twenty-four to forty-eight hours by the appearance of a nodule surrounded by an area of redness. Inflammatory redness alone is regarded as a negative reaction. Observations were made on four groups of patients: (1) proved cases of cancer; (2) a control group of patients suffering from other than malignant disease; (3) clinically uncertain conditions; (4) tumors other than cancer. In the first group the test was correct in 86.4 per cent. There were fourteen negative and ten doubtful reactions. In the control group of 118 patients there were 58 negative, 36 uncertain and 24 positive reactions. In the fourth group of seven mesenchymal tumors there were one negative, four doubtful and two positive reactions. The authors conclude that a positive reaction is of value when signs suggesting a malignant condition are present. A positive reaction alone does not establish the diagnosis of a malignant condition in the absence of other evidence. The negative reaction is of a greater value than the positive one. The reaction is of value in differential

presence retards the healing of the pulmonary lesion, while their removal exerts a beneficial effect. The authors emphasize the value of Benedek's method of skull percussion with the aid of which correct localization of the tumor was made possible. In contradistinction to the value of the percussion method, encephalography demonstrated minimal lateral deviation of the ventricle. The authors point out that the results of operation on the meningeal tuberculosis are quite favorable even in the presence of severe pulmonary involvement. The occurrence of postoperative sensory disturbances of the opposite arm in the area of innervation of the nervus cutaneus antibrachii lateralis as well as of the median nerve is the result of operative trauma to the cortex.

Stomach Contents After Alcohol Test Meal.—Vogels investigated the value of microscopic study of gastric sediment after an alcohol test meal. The contents were secured by the fractional method. Seventy-one patients, including those with gastroduodenal ulceration, acute and chronic gastritis, gastric carcinoma and gastric complications resulting from diseases of other organs, were subjected to the study. Gastric ulcer, especially the callous variety, was characterized by pronounced epithelial desquamations. In acute gastritis, the increase in leukocytes was a characteristic feature. Gastritis accompanying certain general disease states showed the same result. The stomach, after a resection, presented a cytologic picture similar to that of a stomach which had not been operated on; namely, a preponderance of epithelium in the sediment. The bacterial flora of the stomach was found to be quite rich and was little influenced by the degree of acidity. Admixture of particles of food indicate motor disturbance occasioned by organic or functional pyloric stenosis. The oxydase reaction was found to be of value in differential diagnosis because of its ability to preserve the leukocytes in the sediment, especially in the presence of marked fermentation, and because it enables one to differentiate the leukocytes into myeloid and lymphocytic types.

Jahrbuch für Kinderheilkunde, Berlin

139: 277-400 (June) 1933

- Comparative Pharmacologic Investigations on Normal Living and Surviving Small Intestine. W. Catel.—p. 277.
Influence of Sodium Acetate on Inflamed Intestine. W. Catel.—p. 309.
Etiology of Diarrheal Disturbances in Nurslings. Rosel Goldschmidt.—p. 318.
Septic-Allergic Vascular Disturbances. K. Klink and M. Silberberg.—p. 359.
Simple Table for Determination of Length and Weight of Children from Birth to the Age of 14. A. Adam.—p. 377.
Perforation of Tuberculous Lymph Nodes into Bronchus or Trachea, Respectively. H. Orel.—p. 379.

Etiology of Diarrheal Disturbances in Nurslings.—In her study on the bacteriology of diarrheal disturbances of nurslings, Goldschmidt pays particular attention to a type first isolated by Adam and designated by him as the dyspepsia colon bacillus. This type is serologically well characterized and can be differentiated from other types of *Bacillus coli* and from the bacteria of the typhoid-paratyphoid-dysentery group. Demonstration by means of the culture method alone does not produce optimal results, but agglutination is required for a reliable identification. With few exceptions, the dyspepsia colon bacillus occurs only in the intestinal tract of nurslings. It can be demonstrated in approximately 50 per cent of the children having dyspepsia, and it is also occasionally demonstrable in nurslings who are free from intestinal disturbances. The bacillus is only rarely demonstrable in the gastric contents, the urine and the heart blood of dyspeptic nurslings, and it is extremely rare in healthy adults. It has never been found in nurslings having a parenteral *Bacillus coli* infection with healthy intestine, and it has not been detectable among numerous types of *Bacillus coli* from cow's milk. The symptomatology of diarrheal disturbances in which the dyspepsia colon bacillus is present does not differ from other dyspepsias. Moreover, the occurrence of the dyspepsia colon bacillus is by no means confined to the syndrome of intoxication of nurslings. This is demonstrated by the fact that only a small number of the children having diarrhea, in whom the dyspepsia colon bacillus was detected, reached the stage of intoxication. There were signs indicating that the diarrheal disturbances in which the dyspepsia colon bacilli were found are contagious. They occurred in large numbers at a time, and epidemiologic studies

could be made in several stations of the clinic. Bacillary dysentery, one of the most frequent house epidemics, could be excluded in these cases. The author reaches the conclusion that the dyspepsia colon bacillus is one of the many etiologic factors of the diarrheal disturbances in nurslings.

Klinische Wochenschrift, Berlin

12: 929-968 (June 17) 1933

- Pneumococcus Types in Healthy Population. M. Gundel and L. Seitz.—p. 929.
*Subendocardial Hemorrhages. F. Küls and H. Strauss.—p. 933.
Influence of Thyroid on Tissue Oxidation. W. Bünigeler.—p. 933.
Elimination of Prolan in Urine of Old Women. C. Hamburger.—p. 934.
*Functional Significance of Quantity of Blood. J. Plesch.—p. 935.
Clinical Aspects of Catarrh of Small Intestine and of Soap Dyspepsia. O. Porges.—p. 938.
Microscopic Observations on Living Organs. W. Harloeh.—p. 942.
Extraction of Blood Calcium Increasing Substance from Placenta. C. Bomslov and H. Bremm.—p. 944.
Therapy of Peripheral Circulatory Insufficiency. C. E. Schuntermann.—p. 946.
Blood Group Ferment and Elimination of Blood Group Substance. E. Witebsky and T. Satoh.—p. 948.
Modification of Epicutaneous Tuberculin Reaction by Ultraviolet Irradiation. T. Grüneberg and H. Saufferlin.—p. 949.

Subendocardial Hemorrhages.—In their studies on heart and trauma, Küls and Strauss frequently observed subendocardial hemorrhages in the left ventricle. They think that the mechanical theory of the pathogenesis of these hemorrhages is the most convincing. It is based on the fact that the anatomic structure of the endocardium around the conduction system is different from that of the other portions of the heart. Here is found an extremely loose subendocardial connective tissue and an abundance of vessels that evidently serve the special purpose of the conduction system. The authors had an opportunity to examine the hearts of 235 large slaughtered animals about half an hour after death. Of this number, 125 had been killed according to the Jewish ritual (the complete severance of the neck by three or more deep cuts into the trachea and carotids to effect great loss of blood). Subendocardial hemorrhages were found in all of these animals, while of the 110 animals who had been shot only 10 per cent showed subendocardial hemorrhages. In cats that had been killed by means of carbon dioxide, the subendocardial hemorrhages were found in only 2 per cent. These observations indicate that the mode of death is the determining factor and that the defense movements are of minor significance. The sudden cessation of the fine and autonomically regulated coronary circulation, the interruption of the central nervous regulation and the mechanical injury, particularly of the vagus, which all take place in killing according to the Jewish ritual, must be the causes of the subendocardial hemorrhages.

Functional Significance of Quantity of Blood.—Plesch shows that the regulation of the quantity of blood is largely determined by the venous pressure. The connection between the quantity of blood and the venous pressure produces an approximation of the beat volume of the two sides of the heart, and this process can be entirely mechanical without any nervous regulation whatever. But there are regulatory mechanisms helping the two sides of the heart to adapt themselves to the functional requirements, such as the active contraction of the auricle and the contraction or increase in tonus of other venous organs; for instance, the spleen. These regulatory mechanisms suffice under physiologic conditions, but in pathologic conditions, such as throttling at the atrioventricular ostium, stiffening of the ventricular wall, or lack of tonus in large areas of the venous system, the functionally produced beat volume may not be adequate for the maintenance of the circulation. In this case, new blood must be formed in order to increase the auricular pressure. The author shows that venous stasis in decompensation is a compensation for the insufficiency of the volume. He considers edema a compensatory mechanism in that it gives outside support to the venous vessels and is probably a factor in the maintenance of the beat volume. However, the two sides of the heart are not equivalent in regard to the problem of edema. A decompensation of the right heart and of the venous vessels of the systemic circulation produces stasis and edema in the venous organs of the systemic circulation but leaves the lesser circulation unimpaired; however, if the left heart or the venous regulation of the lesser circulation are damaged, the blood vessels of the lungs become enlarged

and produce dyspnea and pulmonary edema. In this case the compensation is as dangerous as the disorder itself, whereas in the systemic circulation the conditions are reversed.

Zentralblatt für Gynäkologie, Leipzig

57: 1393-1440 (June 17) 1933

- *Periodic Fertility and Sterility in Women. H. Knaus.—p. 1393.
*Salpingographic After-Examinations Following Sterilizing Operations. A. Eydung.—p. 1408.
Multiple Epithelial Cysts of Vaginal Mucous Membrane. O. Wallis.—p. 1415.
*Weakness of Labor Pains Resulting from Fatigue as Cause of Inversion Uteri Puerperalis. G. K. F. Schultze.—p. 1421.
Large, Necrotic Myoma. E. A. Björkenheim.—p. 1425.
Endometriosis of Round Uterine Ligament. L. Kaulich and G. Gömöri.—p. 1428.
New Colposcope. E. H. Zweifel.—p. 1430.

Periodic Fertility and Sterility in Women.—Knaus contends that, in women with a regular menstrual cycle of twenty-eight days, conception can take place only from the eleventh to the seventeenth day of the menstrual cycle. The factors are as follows: 1. The ovum remains fertilizable only a few hours after it is discharged by the follicle. 2. The spermatozoa lose their fertilizing capacity in the female genitalia in less than forty-eight hours. 3. The autonomous function of the corpus luteum spurium lasts fourteen days. 4. The rupture of the follicle takes place regularly and spontaneously fourteen days before the next menstruation, irrespective of the length of the menstrual cycle. 5. The impulse for the persistence of the function of the corpus luteum at the beginning of pregnancy comes from the hormones of the implanted ovum. The author emphasizes that in women ovulation is spontaneous and is not, as in some animals, produced by coitus. On the basis of three case reports, he shows that failures in the application of his theory can always be traced to the fact that the menstrual cycle was not of the assumed length. It is necessary for a woman to keep an exact record of the onset of her menstrual periods. If this is done for at least a year, the term of ovulation can readily be determined by subtracting fourteen days from the length of the cycle. In women in whom the length of the menstrual period varies, the date of ovulation varies too. For instance, in a woman in whom the length of the period varies between twenty-eight and thirty-two days, ovulation can take place from the fourteenth to the eighteenth day after the onset of the last menstruation, and conception can take place between the eleventh and the nineteenth day. The author mentions Ogina's studies on this subject (abstracted in THE JOURNAL, June 18, 1932, p. 2257), whom he credits with priority in the discovery of the physiologic sterility of women and with whom he largely agrees. However, he thinks that Ogina extends the period of conception capacity too far and thereby shortens the period of physiologic sterility more than is necessary.

Salpingographic Examinations After Sterilization.—Eydung reports his observations made in the course of the last five years on eighty women who underwent sterilization: Sterilization has been done according to Madlener's method in sixty-three, according to Alfieri's method in nine, and the inguinal incision was made in eight. The only failure in the eighty sterilizations was observed in a woman in whom Alfieri's method had been employed. In the first group, not a single failure became evident and the salpingographic control examinations revealed in only two roentgenograms a visibility of the oviducts with closed ostium abdominale. The author considers tubal sterilization according to Madlener the most suitable method, particularly if it is done in the course of a laparotomy. In cases in which a laparotomy is not required for other reasons, he advises transplantation of the oviducts into the inguinal canal as the preferable method.

Puerperal Inversion of Uterus Caused by Fatigue.—Schultze gives the history of a primipara, aged 21, in whom the spontaneous delivery of the child and the placenta was followed by collapse. Palpation gave the impression that the posterior wall of the uterus presented a hole and, because of the somewhat large size of the fetus and a rather narrow pelvis, a rupture of the uterus was suspected, but in the course of palpation a change became noticeable. On the right side the uterus could not be felt, whereas on the left side it was still palpable, proving the existence of an inversion. The fundus of the inverted uterus could be felt directly behind the

vulva. It had been forced through the external os. Reposition by pressure on the fundus failed, although there was no constriction at the os, but it was possible to press the muscular bag gradually backward by beginning at the right side. The uterus was now extremely flaccid, there was considerable bleeding in spite of the intravenous administration of ergotamine tartrate and, as soon as the hand was withdrawn, the inversion returned. A tampon was introduced, the uterus contracted well around it and the hemorrhage ceased. In discussing the causes of the inversion, the author points out that it is especially frequent in young primiparas and that the weakened and asthenic condition of the patient was probably a contributing factor. Moreover, the labor pains had lasted a considerable time when they ceased, and several injections of hypophyseal extract became necessary. It has been asserted that an overdosage of hypophyseal extract may cause inversion, but, since only the entirely flaccid uterus can become inverted and the hypophyseal extract produces an increased tonus and a spastic contraction of the muscles, the author considers this cause unlikely. As certain conditions and manipulations during the placental period, which generally play an important rôle in uterine inversion, were also absent in this case, he is of the opinion that the weakness of the labor pains resulting from fatigue, noticeable during the entire process of delivery, was the cause of the inversion. He sees in this condition a parallelism to the severe atonic hemorrhages occasionally observed following prolonged and difficult labor. The author does not fear greatly the danger of shock, which is considered by some a contraindication to immediate reposition, but he is convinced that an expectant attitude involves danger of infection.

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Basal Metabolic Rate in Pulmonary Tuberculosis as Affected by Roentgen Irradiation. K. V. Bedeshin and V. P. Tsvetkov.—p. 368.
Glycemic Reaction in Articular Rheumatism. M. I. Zolotova Kostomarova.—p. 384.
Question of Increase of Lipoids in Central Nervous System. M. L. Biryukov and M. P. Dodagorskaya.—p. 389.
Malarial Treatment of Syphilis. L. M. Markus, K. A. Moskvich and G. F. Peklyr.—p. 410.

Combined Form of Lipoid-Amyloid Nephrosis.—Zeman presents a study of six cases of lipoid-amyloid nephrosis. The two fundamental changes are the lipoidosis of the cortical tubular epithelium and the amyloidosis of the tufts and the arterioles. He regards the demonstration of a certain amount of amyloid infiltration of the tufts as a secondary complication of the lipoid dystrophy brought about by the albuminous component. He observed in a patient with acute amyloidosis in a contracted kidney extensive anisotropic lipoidosis of the tubules. This observation contradicts Fahr's dictum that secondary lipoidosis of an amyloid kidney is never extensive. On the basis of his observations the author regards lipoid nephrosis, contrary to the prevalent idea, not as an independent morbid entity but as a symptomatic manifestation of a general disturbance of the metabolism affecting both the lipoid and the albuminous elements.

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- Vaccination Against Whooping Cough. T. Madsen.—p. 663.
Minimum Protein Diet in Ordinary Medical Practice. Lester.—p. 664.
Investigations on Ureteral and Other Internal Antiseptics for Urinary Tract, with Especial Regard to pH of Urine. C. C. Stochholm Borresen.—p. 667.
*Venous Thrombosis of Spleen in Boy Aged 4. P. Schultzer.—p. 673.
Sugar Content in Beer in Relation to Treatment of Diabetic Patients. P. Vogt-Møller.—p. 677.

Venous Thrombosis of Spleen in Boy Aged 4.—In Schultzer's patient, violent hematemesis occurred without preceding illness. The spleen was enlarged and grew larger, retaining its size. Splenectomy was followed by rapid recovery. The spleen, with blood, weighed 520 Gm. Microscopic diagnosis was splenic stasis, probably due to thrombosis of the

